1970/71 DEVELOPMENT ESTIMATES
PROJECT SUBMISSION

PROJECT TITLE : AUTOMATIC TELEPHONE EXCHANGES

RESPONSIBLE MINISTRY/DEPARTMENT : TRANSPORT AND COMMUNICATIONS/ POSTS AND TELECOMMUNICATIONS

MALAWI DEVELOPMENT ESTIMATES, 1969 : HEAD 83 ITEM 16

DANISH AIDED PROJECT

RELATED PROJECTS : Local Telephone Growth
Trunk Circuit Growth Southern Region
Blantyre/Limbe Automatic Telephone Exchange Equipment.

1. FINANCIAL SUMMARY

(a) Funds Requested

Catagory	Jan/Mar 1970	1970/71	1971/72	1972/73	TOTAL 3 Years
2 Buildings	-	1,000	2,000	4,000	7,000
7 Other Equipment	18,000	9,000	24,600	36,000	69,600
TOTAL	18,000	10,000	26,600	40,000	76,600

(b) Non-Danish, Non-Malawi Expenditure:

Equipment purchased under this project will be imported from Denmark.

(c) Previous Expenditure

	£	Cumulative Total
Up to 31/12/68		Nil
1969 Printed Estimates	18,000	
1969 Revised Estimate	nil	
Estimated Carry Forward	18,000	
of which: Jan/Mar.1970	18,000	
1970/71	nil	

(d) Source of Funds

Denmark/Malawi Loan.

2. PROJECT TARGET

To replace small automatic exchanges which are inadequate to meet the growth of demand, and to extend automatic service to existing manual exchanges.

Expected Completion Date

Continuing project.

3. BACKGROUND INFORMATION

Automatic telephone exchanges for Bvumbwe and Chileka were authorised in 1969. To meet the demand of additional junction traffic, additional cooperating equipment is required. Other exchanges which will require replacement include Chiradzulu, Njuli, Makwasa and Luchenza.

4. PROPOSED WORK 1970/73

1970/71 High calling rate exchanges have been ordered for Bvumbwe and Chileka, and additional co-operating equipment will be installed in Limbe. Expenditure proposed for 1971/73 will enable the replacement of other exchanges in the Southern Region and redeployment of the recovered equipment elsewhere in the country.

1970/71 DEVELOPMENT ESTIMATES
PROJECT SUBMISSION

PROJECT TITLE	: BLANTYRE/LIMBE TELEPHONE EXCHANGE EQUIPMENT
RESPONSIBLE MINISTRY/DEPARTMENT	: TRANSPORT AND COMMUNICATIONS/ POSTS AND TELECOMMUNICATIONS
MALAWI DEVELOPMENT ESTIMATES, 1969	: HEAD 83 ITEM 17
DANISH AIDED PROJECT	
RELATED PROJECTS	: Local Telephone Growth Trunk Circuit Growth Southern Region Inter-Regional Trunk Circuit Growth Automatic Telephone Exchanges.

1. FINANCIAL SUMMARY

(a) Funds Requested

Category	Jan/Mar. 1970	1970/71	1971/72	1972/73	TOTAL 3 Years
1 Design & Supervision	-	5,000	14,700	-	19,700
7 Other Equipment	17,542	109,093	26,300	91,500	226,893
TOTAL	17,542	114,093	41,000	91,500	246,593

(b) Non-Danish, Non-Malawi Expenditure:

Equipment purchased under this project will be imported from Denmark.

(c) Previous Expenditure

	£	Cumulative Total
Up to 31/12/68		68,008
1969 Printed Estimates	82,385	
1968 Carry over not in printed Estimates	48,895	
1969 Revised Estimate	86,645	
Estimated Carry Forward	44,635	
of which: Jan/Mar. 1970	17,542	
1970/71	27,093	

(d) Source of Funds

Denmark/Malawi Loan.

2. PROJECT TARGET

To meet increased demand for telephone service in the Limbe/Blantyre area.

Expected Completion Date

The growth in demand for telephone service in the Limbe/Blantyre area is continuing and further increases to the exchange equipment will be necessary after 1971.

3. BACKGROUND INFORMATION

From funds made available from the Denmark/Malawi Loan 1966 it has been possible to provide for a new telephone exchange of 1000 lines at Chichiri, and a replacement telephone exchange of 2000 lines and auto-manual board of 16 positions at Limbe.

4. PROPOSED WORK 1970/73

It is proposed to order equipment with which to extend Chichiri telephone exchange by 2000 lines during 1970/71 and the Blantyre/Limbe area telephone exchanges by a further 2000 lines during 1972/73.

5. JUSTIFICATION FOR PROPOSED WORK

At the present rate of growth it is estimated that an additional 2000 lines will be required at Chichiri by the end of 1971, and a further 2000 lines in the Blantyre/Limbe area during 1973. The work proposed will also permit an extension of the inter-dialling facilities between minor exchanges connected to the Blantyre/Limbe area exchanges.

6. EXECUTION AND SUPERVISION

The installation will be carried out by Departmental staff under the supervision of the contractor's representative.

1970/71 DEVELOPMENT ESTIMATES
APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE : BLANTYRE/LIMBE TELEPHONE EXCHANGE EQUIPMENT

RESPONSIBLE MINISTRY/DEPARTMENT : TRANSPORT AND COMMUNICATIONS/ POSTS AND TELECOMMUNICATIONS

MALAWI DEVELOPMENT ESTIMATES, 1969 : HEAD 83 ITEM 17

DANISH AIDED PROJECT

1. PROJECT OFFICER : Divisional Engineer (Planning), Post Office Headquarters, Blantyre.

2. FINANCIAL DETAILS

(a) Details of Expenditure

	Notes	Jan/Mar. 1970	1970/71	1971/72	1972/73	TOTAL 3 Years
1 Design & Supervision						
Payment to contractor for supervision of Installation		-	5,000	14,700	-	19,700
7 Other Equipment						
2000 line extension at Chichiri		-	83,000	26,300	-	109,300
2000 lines extension at Chichiri C/f	(1)	-	12,000	-	-	12,000
2000 lines at Blantyre		-	-	-	91,500	91,500
600 line extension at Chichiri C/f	(2)	17,542	-	-	-	-
800 line extension at Limbe C/f	(2)	-	14,093	-	-	14,093
		17,542	109,093	26,300	91,500	226,893
TOTAL		17,542	114,093	41,000	91,500	246,593

(b) Notes on Expenditure

(1) Delayed equipment negotiations
(2) Delayed delivery

(c) Import Content

	Jan/Mar. 1970	1970/71	1971/72	1972/73	TOTAL 3 Years
Telephone Exchange Equipment	17,000	113,000	40,000	90,000	243,000
TOTAL	17,000	113,000	40,000	90,000	243,000

(d) Breakdown of Expenditure by Region

All expenditure will be in the Southern Region.

3. LOCATION OF CONSTRUCTION

Blantyre, Chichiri and Limbe.

HEAD 84

POWER

REPUBLIC OF MALAWI

ELECTRICITY SUPPLY COMMISSION OF MALAWI

MAP SHOWING MAIN GENERATION STATIONS AND TRANSMISSION LINES

Thermal Power Station

Hydro Power Station

Proposed Power Station

66kv Transmission Lines

33kv Transmission Lines

11kv Transmission Lines

Proposed Transmission Lines

Fufu

315kw (1962)

Mazamba

Chiwandama

Tembwe

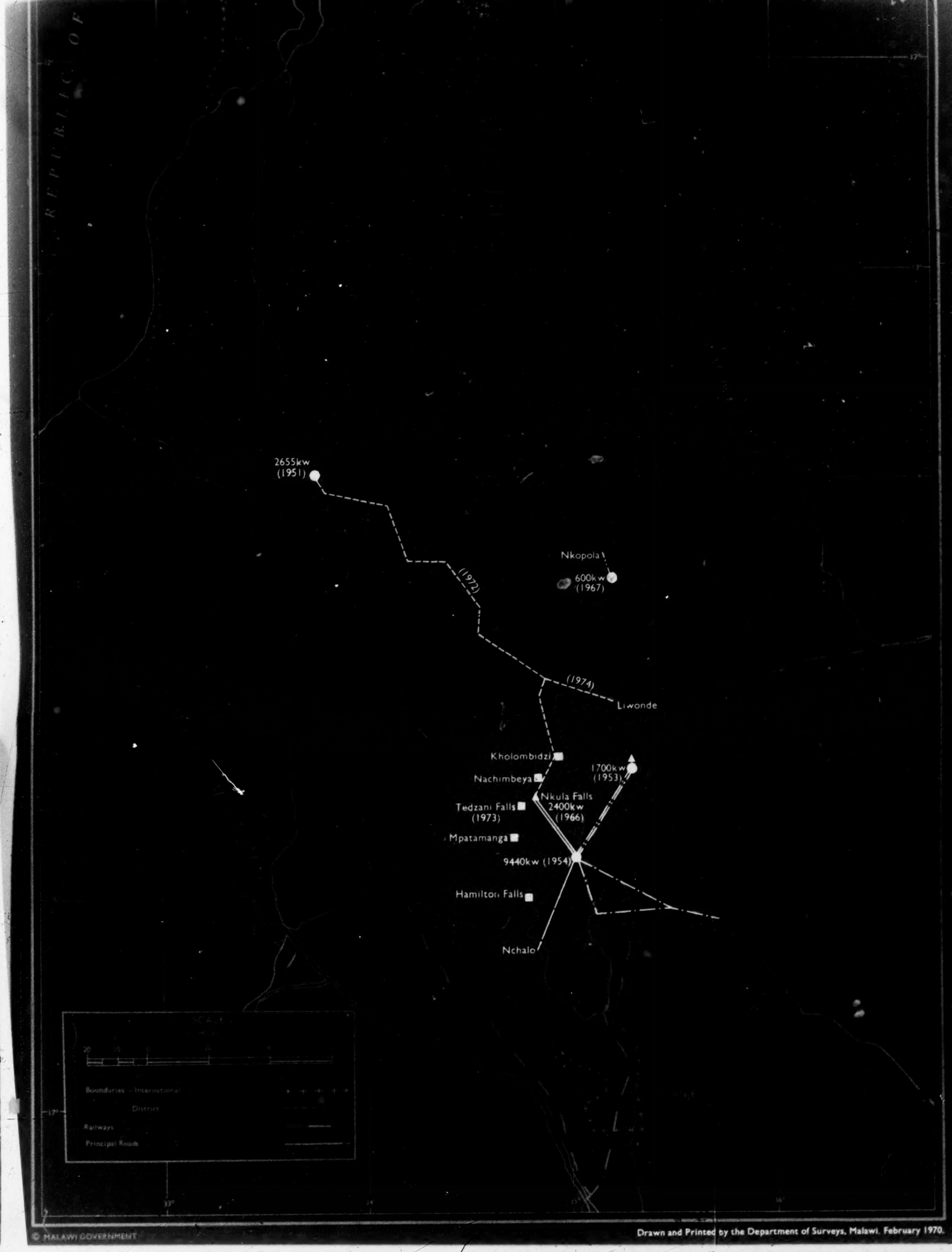
2655kw (1951)

Nkopola

600kw (1967)

FORT JOHNSTON

(1972)



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1970/71 DEVELOPMENT ESTIMATES

PROJECT SUBMISSION

PROJECT TITLE : LOANS TO ESCOM; TEDZANI HYDRO-ELECTRIC PROJECT AND NKULA/LILONGWE PROJECT.

RESPONSIBLE MINISTRY : TRADE AND INDUSTRY

MALAWI DEVELOPMENT ESTIMATES 1969 : NEW PROJECT

RELATED PROJECTS : NONE

1. FINANCIAL SUMMARY

(a) Funds Requested: (£M'000)

Category	1970	1971	1972	TOTAL 3 Yrs.	Residual	TOTAL Project
10 Special Expenditure Credit from I.D.A.	405	708	952	2,065	122	2,187
10 Special Expenditure Loan from African Development Bank	605	497	148	1,250	-	1,250
TOTAL	1,010	1,205	1,100	3,315	122	3,437

NOTE: Estimates for Calendar Year since ESCOM financial year is Jan - Dec.

(b) Non-British, Non-Malawi Expenditure : Not applicable

(c) Previous Expenditure : Nil.

(d) Source of Finance (£M'000)

	1970	1971	1972	1973	1974	TOTAL PROJECT
I.D.A. Credit	405	708	952	106	16	2187
A.D.B. Loan	605	497	148	-	-	1250
ESCOM own Resources	352	551	627	132	56	1718
Total Project	1362	1756	1727	238	72	5155

2. PROJECT TARGET

To increase the generating capacity for electrical energy to meet the rising demand for electricity in the Southern Region, and also to meet the power requirements of Lilongwe and the Capital City.

Expected Completion Date

Agreement with I.D.A. : June 30th, 1974
" " A.D.B. : 30th Sept., 1973
The whole project will be completed by 1975.

3. BACKGROUND INFORMATION

Prior to 1954 the demand for electricity was met by small hydro and diesel stations in the various centres. At this time the expansion of activity in the Southern Region necessitated a centralized power supply and in 1954 the first two steam turbines were commissioned at the Blantyre thermal station to serve the Blantyre area and neighbouring centres by the nucleus of a transmission system.

In/.....

In 1957 the Electricity Supply Commission of Malawi (ESCOM) was set up, under the name of the Nyasaland Electricity Supply Commission, to take over responsibility for electricity supply throughout the country. In 1962 forecasts indicated that the thermal station supplying electricity to the Southern Region would shortly no longer be able to meet the rising demand. In 1963 work was started on a hydro-electric project at Nkula Falls on the Shire River, and in 1966 the first 2 - 8MW sets were commissioned. A third 8MW set was commissioned in 1967 to complete the first stage of development.

In 1965 during the construction of the Nkula Hydro-Electric Scheme forecasts indicated that the firm capacity of the combined hydro and thermal stations in the Southern Region would meet demand up to 1973, by which time new plant would have to be ready for commissioning. However a new load forecast in 1967, which took account of the accelerated pace of economic development, showed that peak demand would exceed the firm capacity in 1971 and not in 1973. As a result, ESCOM commissioned their consultants to draw up a project proposal capable of attracting external finance. This project proposal recommended Tedzani, which is 5 miles south of the existing Nkula Hydro-Electric Scheme, out of six possible hydro-electric sites on the Shire River, including the second stage of Nkula Falls. The Tedzani site was chosen on a capital cost basis, in comparison with all other sites including further development of the existing Nkula Scheme. As a result negotiations were opened with the International Development Association and the African Development Bank for finance for a hydro-electric project at Tedzani, and a Development Credit Agreement between the Government of Malawi and the International Development Association was signed on 11th February, 1970, and a Loan Agreement between the Malawi Government and the African Development Bank was signed on 9th March, 1970. The I.D.A. Credit is for 5.25 million dollars repayable over 50 years after a ten year grace period, and the A.D.B. Loan is for 3 million dollars at 7% interest repayable over 20 years after a five year grace period. Both loans have been on lent by the Malawi Government to ESCOM at commercial rates. This finance envisages the installation of Stage 1 of 2-8MW sets. The site is suitable for further development as demand requires and finance is obtained.

PROPOSED WORK 1970/73

The Tedzani Project Stage 1 will take 3 years to construct. In the meantime, to meet the expected short-fall of power, it will be necessary to install and commission 3-MW of Diesel plant at Lilongwe by the end of 1971, and to interconnect Lilongwe with the hydro and thermal stations in the Southern Region by a 66 Kv transmission line which will serve to meet the increasing power requirements of Lilongwe, now being developed as the new Capital City. The planned timetable is as follows :-

(a) Tedzani - to commission No. 1 - 8MW machine, December, 1972
(b) Tedzani - to commission No. 2 - 8MW machine, February, 1973
(c) Lilongwe to commission 3 MW Diesel by the end of 1971
(d) Lilongwe Transmission Line - to commission by the end of 1971.

The loans also provide for the foreign costs of a certain amount of general development to meet the expected rising demand for power resulting from economic expansion. This development includes the provision of transmission lines, substations and general reticulation to meet increased consumption by existing consumers and the requirements of new consumers.

As a condition of the I.D.A. Credit the Malawi Government is required to make a study of the resources of water from Lake Malawi and the Upper Shire River for irrigation, power production and other uses. A further condition requires ESCOM to undertake a programme of managerial, administrative, professional and technical training for its staff.

Bids for the contracts for the civil works and major plant are due in April, 1970. The main contracts are expected to be awarded in June, 1970.

5/...

5. JUSTIFICATION FOR PROPOSED WORK

The expected growth of demand for electric power is shown in the following table :-

Demand Forecasts MW (simplified)

	1969	1970	1971	1972	1973	1974
Southern Region						
Peak demand	21.55	23.8	25.7	27.8	30.6	33.7
Present Firm Capacity	26.0	26.0	26.0	-	-	-
Lilongwe						
Peak demand	1.29	1.8	2.2	2.5	2.7	3.0
Present Firm Capacity	1.5	1.5	1.5	-	-	-
After Completion of Project						
Peak demand	-	-	27.9	30.3	33.3	36.7
Expected Firm Capacity	-	-	31.6	31.6	46.8	46.8
			(1)	(2)	(3)	(4)

("Firm capacity" is total installed interconnected capacity less the capacity of the largest individual machine.)

NOTES (1) Southern Region Firm Capacity (26.0 MW) plus Lilongwe Total Capacity (2.6 MW) plus 3-MW Diesel.

(2) No change

(3) Interconnected Firm Capacity (31.6 MW) plus 2-8 MW Tedzani less four small machines at Lilongwe 0.8 MW.

(4) No change.

These figures illustrate that demands will exceed firm capacity by 1971 unless the systems are interconnected and extra capacity is installed at Lilongwe. The forecasts from which the programme has been derived were submitted to and accepted by the World Bank and the African Development Bank during the course of negotiations.

6. EXECUTION AND SUPERVISION

The project will be carried out by contractors to ESCOM, to I.B.R.D. and A.D.B. requirements, which include international tendering procedures. The Commission's own consultants will supervise all stages of the work.

5/...

1970/71 DEVELOPMENT ESTIMATES

APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE : LOANS TO ESCOM: TEDZANI HYDRO-ELECTRIC PROJECT AND NKULA/LILONGWE PROJECT

RESPONSIBLE MINISTRY : TRADE AND INDUSTRY

MALAWI DEVELOPMENT ESTIMATES 1969 : NEW PROJECT

1. PROJECT OFFICER : Secretary for Trade and Industry, through the General Manager, Electricity Supply Commission of Malawi.

2. FINANCIAL DETAILS (Categories of expenditure are those agreed between ESCOM and the Lenders).

(a)

	Details of Expenditure	Notes	1970	1971	1972	TOTAL 3 Yrs.	Residual Liability	Total Project
							(£M'000)	
	I.D.A. CREDIT							
A	(1) Civil Engineering Works	(1)	139	287	228	654	49	703
	(2) Power Station Plant	(2)	160	170	497	827	44	871
	(3) Substations	(3)	31	41	192	264	13	277
	(4) System Control Centre	(4)	25	29	-	54	-	54
	(5) Desilting Works	(5)	30	60	-	90	-	90
	(6) Diesel - 3 MW	(6)	5	116	30	151	6	157
	(7) Escom Services	(7)	15	-	-	15	-	15
	(8) Training	(8)	-	5	5	10	10	20
	Total I.D.A. Credit		405	708	952	2,065	122	2,187
	A.D.B. LOAN							
B	(1) Tedzani Lines	(9)	72	45	11	128	-	128
	(2) Lilongwe Line	(10)	347	213	52	612	-	612
	(3) Substations - Nkula/Lilongwe Line	(11)	20	42	3	65	-	65
	(4) Distribution	(12)	166	197	82	445	-	445
	Total A.D.B. Loan		605	497	148	1,250	-	1,250
	TOTAL LOANS		1,010	1,205	1,100	3,315	122	3,437
	ESCOM OWN RESOURCES							
A	(1) Civil Engineering Works	(1)	113	278	363	754	147	901
	(2) Power Station Plant	(2)	-	1	7	8	10	18
	(3) Substations	(3)	-	-	2	2	9	11
	(4) System Control Centre	(4)	35	5	-	40	-	40
	(5) Desilting Works	(5)	20	40	-	60	-	60
	(6) Diesel - 3 MW	(6)	5	23	-	28	-	28
	(7) Escom Services	(7)	32	20	16	68	12	80
	(8) Training	(8)	-	5	5	10	10	20
B	(1) Tedzani Lines	(9)	8	11	3	22	-	22
	(2) Lilongwe Line	(10)	38	52	13	103	-	103
	(3) Substations - Nkula/Lilongwe Line	(11)	-	15	-	15	-	15
	(4) Distribution	(12)	101	101	218	420	-	420
	Total ESCOM Resources		352	551	627	1530	188	1718
	TOTAL PROJECT		1362	1756	1727	4845	310	5155

(b) Notes on Expenditure

(1) Civil Engineering Works: Expenditure in respect of staff housing, access roads, a diversion weir, intake works, surge chamber, tunnel, conduit, tailrace, a power house and penstocks.

(2) Power Station Plant: Valves, turbines and ancillary plant and also alternators, control gear and ancillary equipment.

(3) Substations: Switchgear and transformers for the transmission of power from Tedzani to Blantyre Main Switchyard and interconnection with Nkula Station.

(4) System Control Centre: Building and control gear for the supervision and remote control of Tedzani Station, Nkula Station, Blantyre Thermal Station and the Nkula/Lilongwe and Southern Region transmission and distribution systems.

(5) Desilting Works: Low velocity water chamber at Tedzani, and associated works to settle and discharge silt from driving water to minimise erosion of turbine runners.

(6) Diesel - 3 MW : 3 MW of Diesel plant complete with auxiliaries and ancillary equipment, transformers, switchgear, etc. for installation at Lilongwe.

(7) Escom Services : Electricity, water supplies and communications equipment for use of contractors working at Tedzani.

(8) Training : Costs of training local staff of Escom in specialised fields, in accordance with agreement with IDA.

(9) Tedzani Lines : Two 66 Kv Transmission Lines on steel towers with 0.175 sq. inch. conductors for a total distance of 35.75 miles, one from Tedzani to Nkula (4.5 mls) and the other from Tedzani to Blantyre (31.25 mls.).

(10) Lilongwe Line : 165 miles of 66 Kv Transmission Line on steel towers with 0.125 sq. inch. conductors from Nkula Sub-station to Lilongwe via Balaka and Dedza.

(11) Sub-stations - Nkula/Lilongwe : Equipment for installation at Nkula Sub-station to supply the Lilongwe line, and equipment to be installed at Lilongwe to transform, control and distribute power to the existing and new reticulation.

(12) Distribution : General transmission and distribution equipment, conductors, insulators, line hard-ware, transformers, switchgear etc. for the construction of new lines and reinforcement of existing lines to supply new consumers and increasing demands from existing consumers.

(c) Import Content (£M'000)

Category	1970	1971	1972	TOTAL 3 Yrs.
(1) Civil Engineering Works	139	287	228	654
(2) Power Station Plant	160	170	497	827
(3) Substations	31	41	192	264
(4) System Control Centre	25	29	-	54
(5) Desilting Works	30	60	-	90
(6) Diesel - 3 MW	5	116	30	151
(7) Escom Services	15	-	-	15
(8) Training	-	5	5	10

B/...

	Category	1970	1971	1972	TOTAL 3 Yrs.
B	(1) Tedzani Lines	72	45	11	128
	(2) Lilongwe Line	347	213	52	612
	(3) Substations - Nkula/Lilongwe Line	20	42	3	65
	(4) Distribution	166	197	82	445
	TOTAL	1,010	1,205	1,100	3,315

(d) Breakdown of Expenditure by Region

Item A
1 Southern Region
2 " "
3 " "
4 " "
5 " "
6 Central Region
7 Southern Region
8 Indivisible

Item B
1 Southern Region
2 Southern and Central Regions
3 " " " "
4 As follows :-

	1970	1971	1972
Northern Region	£ 8,000	£ 13,000	£ 7,000
Central Region	£ 21,000	£ 44,000	£15,000
Southern Region	£137,000	£140,000	£60,000
TOTAL	£166,000	£197,000	£82,000

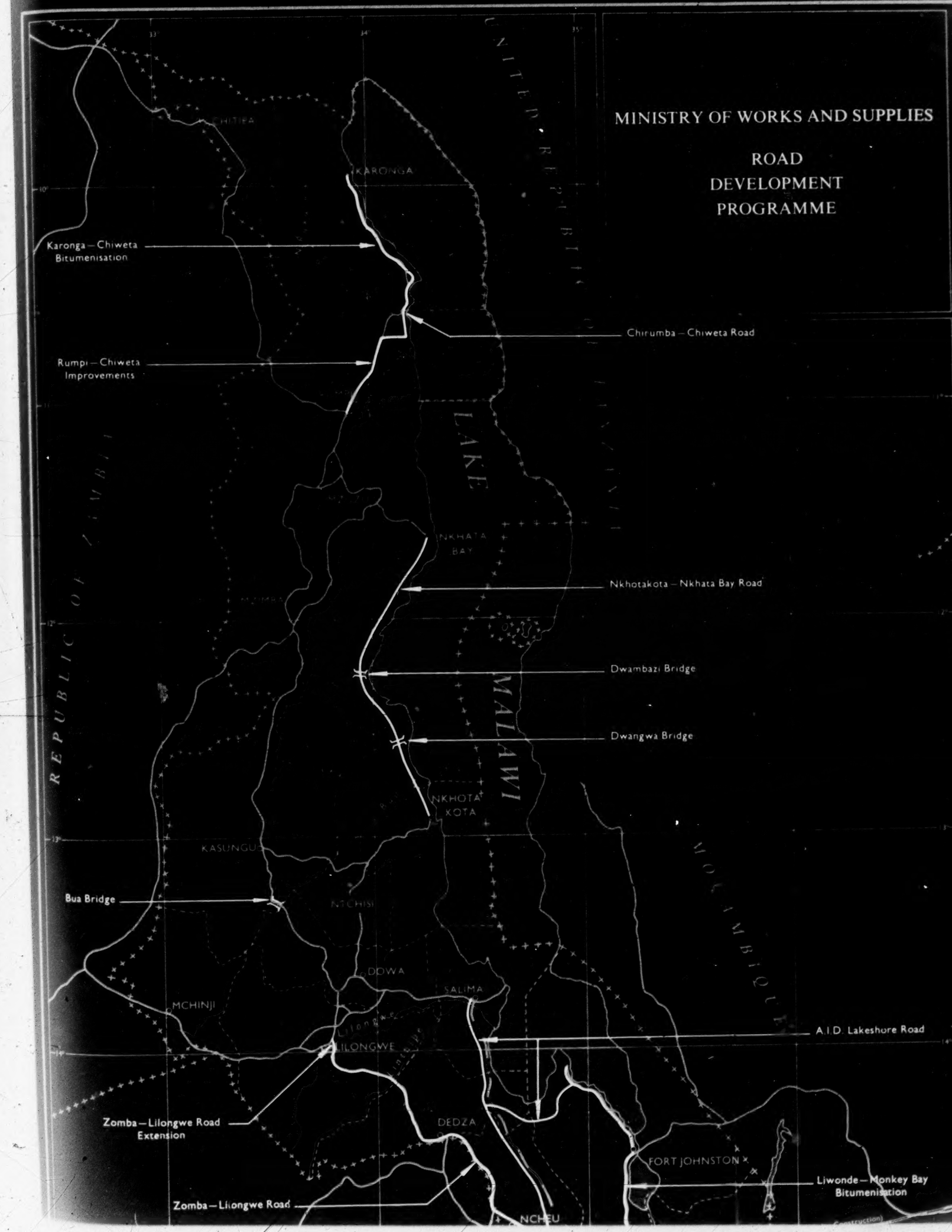
3. LOCATION OF CONSTRUCTION

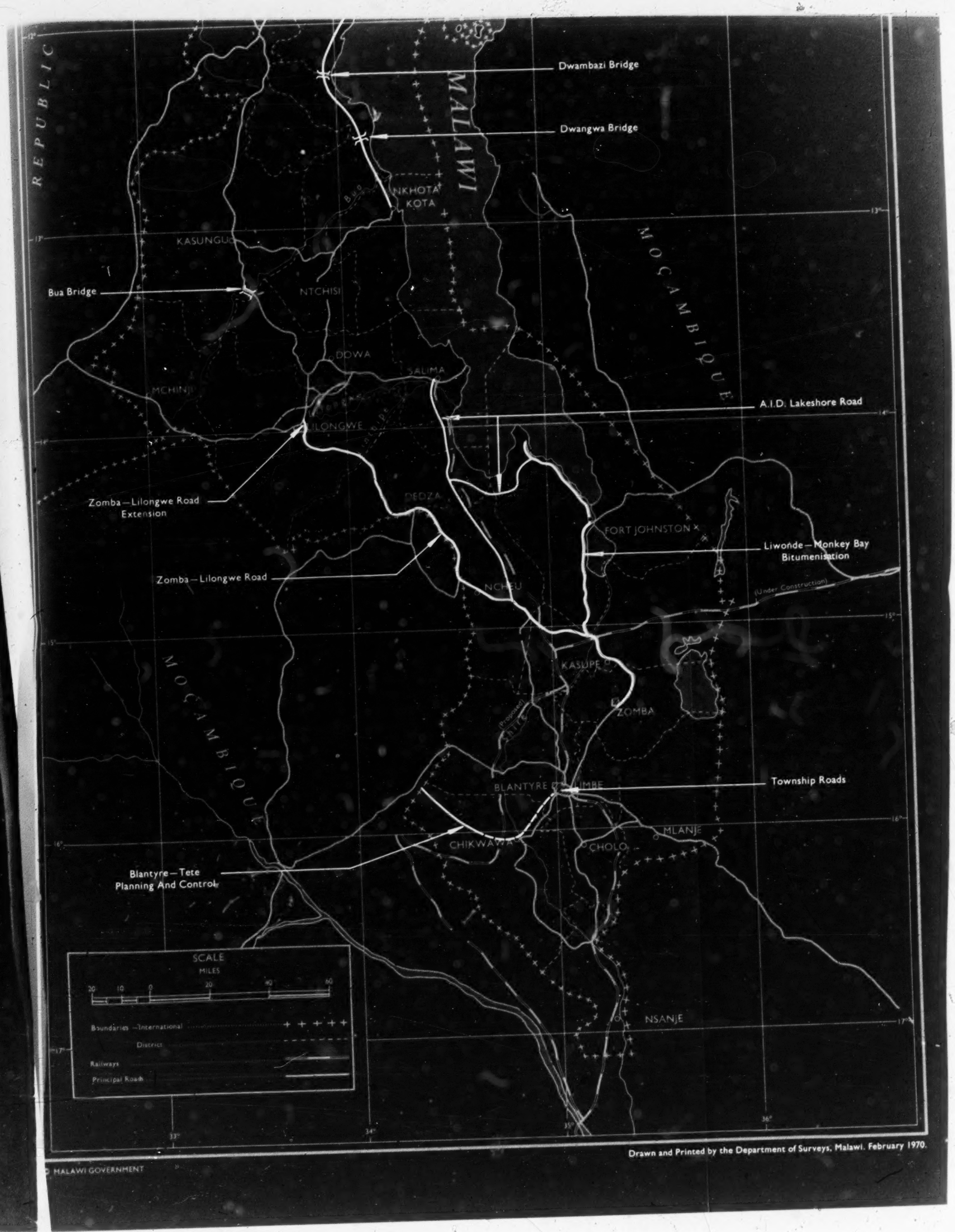
Engineering work at Tedzani, Nkula, Blantyre and Lilongwe. Transmission and distribution lines and substations in all three Regions. All work to be carried out by ESCOM and its contractors.

HEAD 85

TRANSPORTATION

REPUBLIC OF MALAWI





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1970/71 DEVELOPMENT ESTIMATES

PROJECT SUBMISSION

PROJECT TITLE: : ZOMBA-LILONGWE ROAD CONSTRUCTION

RESPONSIBLE MINISTRY: : WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969 : HEAD 85 PART I ITEMS 1,2,3 & 4
PART II ITEMS 62 & 63

RELATED PROJECTS: : I.D.A. Road Transport Survey

1. FINANCIAL SUMMARY

(a) Funds Requested

Category	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
1 Design and Supervision	15,000	46,226	-	-	46,226
4 Roads and Bridges	300,000	1,379,802	-	-	1,379,802
TOTAL	315,000	1,426,028	-	-	1,426,028

(b) Non-British, Non-Malawi Expenditure: Not applicable

(c) Previous Expenditure:

		Cumulative Total
1. Design and Supervision		
to 31/12/1968	76,774	76,774
1969 Printed Estimates	85,800	
1969 Revised Estimates	80,000	
1969 Estimated Carry-Forward	Nil	

Note: In addition the Preliminary Engineering Survey was completed in 1967 at a total cost of £175,957 and the Road Transport Study in 1969 at a total cost of £38,928.

4. Roads and Bridges		
to 31/12/68	1,500,100	1,500,100
1969 Printed Estimates	2,160,000	
1969 Revised Estimates	1,410,000	
1969 Carry-Forward	Nil	

(d) Source of Finance

	1968	1969	Jan-Mar 1970	1970/71	Total
1 Design and Supervision					
I.D.A. (85%)	65,258	68,000	12,750	39,292	185,300
Local (15%)	11,516	12,000	2,250	6,934	32,700
TOTAL	76,774	80,000	15,000	46,226	218,000
4 Roads and Bridges					
I.D.A. (84%)	1,260,000	1,184,400	252,000	1,159,118	3,855,518
Local (16%)	240,100	225,600	48,000	220,684	734,384
TOTAL	1,500,100	1,410,000	300,000	1,379,802	4,589,902

/2.

Total I.D.A.	1,325,258	1,252,400	264,750	1,198,410	4,040,818
Total Local	251,616	237,600	50,250	227,618	767,084
Total Project	1,576,874	1,490,000	315,000	1,426,028	4,807,902

2. PROJECT TARGET

To provide a Class I bitumen road between Zomba and Lilongwe.

Expected completion date: Financial year 1970/71

3. BACKGROUND INFORMATION

The Zomba-Lilongwe road is part of the main spinal road linking the North and South of Malawi and is one of the international routes through Malawi. The road connects with the new Nacala rail link at Liwonde. The Zomba-Lilongwe section is the most important section as yet unbituminised and under this project will be reconstructed to Class I bitumen standard.

The Engineering Survey was completed in 1967 at a total cost of £175,957.

Following this Survey the International Development Association of the World Bank awarded a Credit and in agreement with the World Bank, the construction work is being carried out under three contracts awarded in February and March 1968 as follows:-

Contract No. 1. Messrs General Construction Dragages Ermoque Consortium ("GECDEC") for 89 miles of road between Liwonde and Dedza.

Contract No. 2. Messrs. W.&.C. French (Overseas) Ltd., for 50 miles of the road between Dedza and Lilongwe.

Contract No. 3. Was awarded to Messrs. Dominion Earthworks Ltd., for 29 miles between Zomba and Liwonde. A notice of forfeiture has been served on this Company and recommendations have been made to the World Bank for completion of this work.

4. PROPOSED WORK 1970/73.

Completion of the improvement and bitumenisation of the Zomba-Lilongwe road, begun in 1968 for a total distance of 168 miles. It is hoped that there will be a balance available from the I.D.A. Credit after completion of the present work. When the amount of this balance is known proposals will be submitted to the World Bank for its use. As a condition of the Loan the Malawi Government was required to commission a Road Transport Study. This study was carried out in 1969 by the Economist Intelligence Unit Ltd., with the approval of the I.D.A. and the final report has been received.

5. JUSTIFICATION FOR THE PROPOSED WORK

The project was appraised and approved by the International Development Association from which the Credit was obtained.

6. EXECUTION AND SUPERVISION

The project is being carried out by contractors supervised by consultants and controlled by the Ministry of Works and Supplies.

1970/71 DEVELOPMENT ESTIMATES

APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE:	:	ZOMBA-LILONGWE ROAD CONSTRUCTION
RESPONSIBLE MINISTRY:	:	WORKS AND SUPPLIES
MALAWI DEVELOPMENT ESTIMATES 1969:	:	HEAD 85 PART I ITEMS 1, 2, 3 & 4 PART II ITEMS 62 & 63

1. PROJECT OFFICER.

The Secretary for Works and Supplies
Execution by contract (3 sections)
supervised by consultants.

2. FINANCIAL DETAILS

(a) Details of Expenditure

	Jan- Mar 1970	1970/71	1971/72	1972/73	Total 3 Years
1 Design & Supervision	15,000	46,226	-	-	46,226
4 Roads and Bridges	300,000	1,379,802	-	-	1,379,802
TOTAL	315,000	1,426,028	-	-	1,426,028

(b) Notes on Expenditure Payments are made to contractors on production of certificates from the consultants. Reimbursemant is then sought from the I.D.A. Headquarters in Wasington D.C.

(c) Import Content

Jan-Mar 1970	1970/71	1971/72	1972/73
236,000	927,000	-	-

(d) Breakdown of Expenditure by Region

Southern Region	1,400,000	
Central Region	3,407,902	
Total (whole project)	4,807,902	(1968 to 1971)

3. LOCATION OF CONSTRUCTION

Southern Region	:	Zomba-Balaka
Central Region	:	Balaka-Lilongwe

1970/71 DEVELOPMENT ESTIMATES

PROJECT SUBMISSION

PROJECT TITLE	:	FEEDER ROADS
RESPONSIBLE MINISTRY	:	WORKS AND SUPPLIES
MALAWI DEVELOPMENT ESTIMATES 1969	:	HEAD 85 ITEMS 8 & 10
BRITISH AIDED PROJECT NO.	:	41
RELATED PROJECTS	:	This project combines the two former projects, District Roads and Crop Extraction Roads

1. FINANCIAL SUMMARY

(a) Funds Requested

Category	Jan-Mar 1970	1970/71	1971/72	1972/73	TOTAL 3 Yrs
4. Roads & Bridges	2,000	63,400	40,000	40,000	143,400
TOTAL	2,000	63,400	40,000	40,000	143,000

(b) Non-British, Non-Malawi Expenditure

Nil

(c) Previous Expenditure

	£	Cumulative Total
1965	20,537	20,537
1966	39,833	60,370
1967	69,000	129,370
1968	38,852	168,222
1969 Printed Estimates	40,000	-
1969 Revised Estimates	14,600	-
1969 Estimated carry forward	25,400	-
of which: Jan-Mar 1970	2,000	-
70/71	23,400	-

(d) Source of Finance

U.K. Development Loan

2. PROJECT TARGET

(1) To construct new or improve existing crop extraction roads.
(2) To improve the more agriculturally important district roads.
(3) To improve or construct roads of social or administrative importance.

Expected Completion Date: Continuing Programme

3. BACKGROUND INFORMATION

The Feeder Road Programme provides for the construction of new roads and improvement of existing roads which carry agricultural produce from villages to markets and thence to the main transport centres. These feeder roads also have general economic and social functions in that they serve hospitals, schools and villages in the more important agricultural areas. Most of the existing feeder roads in the country are low grade earth surfaced with limited drainage and substandard bridging. New crop roads and improvements to existing crop roads will be closely related to specific agricultural projects already commenced and particular settlement schemes designed to open up new areas of cultivation.

4. PROPOSED WORK 1970/71

The project provides for a continuous programme of feeder road development in the construction of new roads and improvements to existing ones. In 1970/71 the main emphasis will be on the roads to serve agricultural areas growing rice, tea and tobacco. In 1970/71 it is proposed to complete the following, which due to a late start could not be done in 1969:-

Southern Region: Tea roads into Mlanje/Cholo Area
Northern Region: Chinyakula/Chombe Tea road

New work will include the following:-

Southern Region: Likangala Irrigation Scheme
Improvement of road along the line of the new Nacala Link Railway (D.221)

Central Region: Access roads to resettlement schemes in the Lilongwe area. Roads for tobacco schemes in the Kasungu area.

Northern Region: Access roads to Wovwe and Lufiya Irrigation schemes.

Each years programme is planned in conjunction with the Ministry of Agriculture.

5. JUSTIFICATION FOR PROPOSED WORK

Inability to transport produce to market centres has been a major impediment to agricultural development in the country. The construction of new and improvements to existing feeder roads is a necessary pre-condition for development in rural areas both in enabling the transportation of crops to markets and Farmers Marketing Board centres on main roads and also for the transportation into the areas of fertilisers and consumable goods. Past improvements to the feeder roads networks have confirmed that agricultural productivity has been stimulated in the areas served. With the construction of new feeder roads, extension staff of the Ministry of Agriculture are able to provide a more efficient service to the farmers who could hitherto not be reached apart from on foot. The construction of new roads and improvements to existing tracks and roads also assists the development of social services such as schools and hospitals etc., in the more important agricultural areas.

6. EXECUTION AND SUPERVISION

Ministry of Works and Supplies, by direct labour.

1970/71 DEVELOPMENT ESTIMATES

APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE : FEEDER ROADS

RESPONSIBLE MINISTRY : WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969 : HEAD 85 ITEMS 8 & 10

BRITISH AIDED PROJECT NO. : 41

1. PROJECT OFFICER — Director of Roads, Ministry of Works and Supplies

2. FINANCIAL DETAILS

(a)

Details of Expenditure	Notes	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Years
4. Roads & Bridges	(1)	2,000(W)	63,400(W)	40,000	40,000	143,400
TOTAL		2,000	63,400	40,000	40,000	143,400

(W)= Construction by Ministry of Works and Supplies by direct labour

(b) Notes on Expenditure

(1) Direct works construction cost

(c) Import Content (Fuel, tyres, grader blades, etc.)

Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Years
800	25,000	15,000	15,000	55,800

(d) Breakdown of Expenditure by Region

The 1970/71 programme has been planned in conjunction with the Ministry of Agriculture and although there may be slight alterations, provisional breakdown is as follows:-

Southern Region	21,400
Central Region	2,000
Northern Region	40,000

3. LOCATION OF CONSTRUCTION

In accordance with the provisional programme amended as necessary.

1970/71 DEVELOPMENT ESTIMATES

PROJECT SUBMISSION

PROJECT TITLE	:	GENERAL IMPROVEMENTS
RESPONSIBLE MINISTRY:	:	WORKS AND SUPPLIES
MALAWI DEVELOPMENT ESTIMATES 1969	:	HEAD 85 ITEM 9
BRITISH AIDED PROJECT NO.	:	41
RELATED PROJECTS	:	Nil

1. FINANCIAL SUMMARY

(a) Funds Requested

Category	Jan-Mar 1970	1970/71	1972/72	1972/73	TOTAL 3 Yrs
4. Roads & Bridges	-	30,000	30,000	30,000	90,000
TOTAL	-	30,000	30,000	30,000	90,000

(b) Non-British, Non-Malawi Expenditure

Nil

(c) Previous Expenditure

	£	Cumulative Total
1965	27,441	27,441
1966	27,874	55,315
1967	29,976	85,291
1968	28,901	114,192
1969 Printed Estimates	30,000	
1969 Revised Estimates	30,000	
1969 Estimated carry fwd.	Nil	

(d) Source of Finance

United Kingdom Development Loan

2. PROJECT TARGET

To continue the programme of improvement to main and secondary roads.

Expected Completion Date

Continuing Programme

3. BACKGROUND INFORMATION

The main trunk and secondary road system has developed from a network of primitive roads and tracks connecting the main administrative centres and has changed very little since the inception of these roads. They were constructed with a minimum of design and preparation and the easiest and cheapest routes were selected. This has led to bad alignments and difficult and often dangerous conditions during the rainy season. Although traffic volumes have increased over the last few years by between 5 and 10% per annum the reconstruction of these roads has not kept pace with such demands. A continuing programme of improvements is therefore necessary to enable existing roads to cope with current traffic volumes and to make safe at least some of the worst accident black spots.

4. PROPOSED WORK 1970/73

This will be a continuous programme of additional drainage structures, sub-standard bridge reconstruction, road surface betterment, re-alignment of dangerous road sections and elimination of accident black spots. The programme is drawn up annually in consultation with all the different parties involved.

5. JUSTIFICATION FOR PROPOSED WORK

The programme of general improvements is essential in order to at least ameliorate conditions on some of the more dangerous and difficult sections of those roads for which no capital funds are likely to become available in the near future for major reconstruction.

6. EXECUTION AND SUPERVISION

The project will be executed by the Ministry of Works and Supplies Roads Department by direct labour and supervised by the Ministry's Regional Engineers.

1970/71 DEVELOPMENT ESTIMATES

APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE : GENERAL IMPROVEMENTS

RESPONSIBLE MINISTRY : WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969 : HEAD 85 ITEM 9

BRITISH AIDED PROJECT NO. : 41

1. PROJECT OFFICER : Director of Roads, Ministry of Works and Supplies

2. FINANCIAL DETAILS

(a)

Details of Expenditure	Notes	Jan-Mar 1970	1970/71	1971/72	1972/73	Tot 3 Y
4. Roads & Bridges (1)		-	30,000	30,000	30,000	90,0
TOTAL		-	30,000(W)	30,000	30,000	90,0

(W) = Construction by Ministry of Works and Supplies by direct labour

(b) Notes on Expenditure

(1) Direct labour work construction costs only.

The programme is subject to amendment due to higher priorities coming to light over the rainy season. Approximate breakdown of costs is likely to be : bridges - 15%; other drainage structures 35%; surface betterment - 35%; alignment improvements - 15%.

(c) Import Content

£4,000 (Mostly fuel)

(d) Breakdown of Expenditure by Region (1970/71 only)

	Northern	Central	Southern
Approximately	7,400	16,000	6,600

3. LOCATION OF CONSTRUCTION

Northern Region - Mzuzu, Rumpi and Mzimba

Central Region - Chitala, Golomoti, Ntchisi and Nkhotakota

Southern Region - Ngabu and Namweras

1970/71 DEVELOPMENT ESTIMATES

PROJECT SUBMISSION

PROJECT TITLE	:	NKHOTAKOTA-NKHATA BAY ROAD
RESPONSIBLE MINISTRY	:	WORKS AND SUPPLIES
MALAWI DEVELOPMENT ESTIMATES 1969	:	HEAD 85 ITEM 12
BRITISH AIDED PROJECT NO.	:	41
RELATED PROJECTS	:	Dwangwa & Dwambazi Bridges, Chirumba/Chiweta Road, A.I.D. Lakeshore Road.

1. FINANCIAL SUMMARY

(a) Funds Requested

Category	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
4. Roads & Bridges	20,000	82,000	88,181	-	170,181
TOTAL	20,000	82,000	88,181	-	170,181

(b) Non-British, Non-Malawi Expenditure

Nil

(c) Previous Expenditure

	£	Cumulative Total
1968	38,819	38,819
1969 Printed Estimates	70,000	
1969 Revised Estimates	70,000	
Estimated 1969 carry forward	Nil	

(d) Source of Finance

United Kingdom Development Loan

2. PROJECT TARGET

To construct an all-weather road between Nkhotakota and Nkhata Bay in order to extend northwards the Lakeshore Road.

Expected Completion Date: Early 1972

3. BACKGROUND INFORMATION

This project forms part of the Lakeshore Road which will run from Balaka to Karonga, and is a continuation of the Benga/Nkhotakota road completed in 1968 to Class II gravel standards. The National Transportation Plan recommended that stage construction be used to develop the road north from Salima through Nkhotakota to Bandawe and Nkhata Bay.

The two major bridges on the road over the Dwangwa and Dwambazi rivers will be constructed with financial assistance from the Beit Trust.

Construction of first-stage earth roads started in 1964-65 from Chintechе southwards to Tukombo towards the Dwambazi River, and from Nkhotakota towards the Dwangwa River. However, the units had to be withdrawn at the end of 1965 due to lack of funds. The project began in November 1968 with the establishment of a base camp and new construction is now approaching the Dwangwa river.

4. PROPOSED WORK 1970/73

To continue the construction of the Nkhotakota/Nkhata Bay road northwards towards Nkhata Bay. The project has been designed for stage construction. The programme involves a road length of 120 miles and 34 bridges and 40 major culverts will be required (in addition to the Dwangwa and Dwambazi Bridges, separately financed). All work will be carried out on the final optimum engineering alignment.

5. JUSTIFICATION FOR PROPOSED WORK

The Lakeshore has potential for considerably higher productivity than at present. Agriculture is the sector of greatest potential, but processing of forest products, fisheries and tourism all show promise of important growth.

The Lakeshore plain between Nkhotakota and Nkhata Bay covers a distance of approximately 100 miles. The crop-producing hinterland extends westwards from Chinteche in the north for some 15 miles, and from Nkhotakota in the south for approximately 30 miles, covering an area of some 1,600 square miles, which is practically devoid of any road communication. Population density in this area varies between 50 and 400 persons per square mile.

Due to the lack of roads agricultural development in the area is severely restricted. No public (or private) transport serves the area, and adequate health and educational facilities cannot be provided. The rice-producing area north of Nkhotakota is severely handicapped due to the extremely difficult communications. Development of the area in every aspect is, therefore, severely restricted, and the people are at present parochial and self-sufficient at a very low economic level. Their amenities are similarly poor. There are only three dispensaries and postal agencies in the 100 miles between Nkhotakota and Chinteche. The construction of the proposed road would permit the construction of feeder roads to the crop producing hinterland.

There are two major centres of production potential on the Lakeshore littoral north of the Dwangwa river. These consist of a) the Limpasa Dambo, with an extension down the coast to the Mayembe river north of Bandawe Port and b) the north side of the Dwangwa river valley and the north of the Dwambazi river together with the area between these two rivers.

Assuming the poldering of the Limpasa dambo and the gradual expansion of tea in the Northern Area and the implementation of the British Integrated Rice project in the Southern Area, estimated agricultural surplusses for the two areas are as follows:-

1970	Northern Centre	Southern Centre
Maize	500	1,100
Groundnuts	570	140
Pulses and Other Crops	20	20
Paddy	920	850
Tea	360	-
Coffee	40	-
Total	2,410	2,110

1975	Northern Centre	Southern Centre
Maize	580	1,300
Groundnuts	660	160
Pulses and other crops	40	40
Paddy	2,650	11,400
Tea	420	-
Coffee	80	-
TOTAL	4,430	12,900
1980		
Maize	680	1,500
Groundnuts	760	180
Pulses and other crops	60	60
Paddy	4,660	27,300
Tea	560	-
Coffee	160	-
TOTAL	6,880	29,040

The acreage potentials for rice production in the areas are as follows:-

1.	Kaombe River/Tiwi Dambo	3,000 acres
2.	Bua River	3,000 "
3.	Dwangwa River	5,000 "
4.	Dwambazi River	3,000 "
5.	Limpasa Dambo	15,000 "
6.	South Nkhata	1,000 "
	TOTAL	30,000 acres

The objective is to produce rice from these areas, together with the gradual introduction of cattle as communications improve, settlement spreads and the tsetse fly recedes into the escarpment areas of the game reserves. It may also be possible to develop a small banana and citrus growing area here, to improve fruit supplies for the Central and Northern Regions. Until there is an all-weather road, it is difficult even to investigate the possibilities.

The Republic of China has established a pilot rice demonstration plot at the Tiwi dambo as part of their expanded programme of technical assistance, and full utilisation of this team will depend on the existence of a road.

There are patches of tsetse fly in the escarpment areas backing the plain. These are receding, and it is envisaged that cattle keeping will spread northwards from Salima District. Extension effort will be needed as these are not cattle people, and communications are necessary for an effective extension effort, and for marketing. (Cattle would be run on the pattern long established in Karonga District, using the dambo margins in the winter dry season, and the dry land grazing areas and foot hills in the summer rains).

There is a Young Pioneer base already established on the Dwambazi which is endeavouring to introduce improved methods of husbandry, but for nine months of the year it is accessible only by boat, bicycle or jeep track. Young Pioneers will be associated with the Chinese pilot rice plot at Tiwi Dambo, but the development of the full rice-growing potential of the area will require further organised settlement, which cannot take place until adequate communications exist.

6. EXECUTION AND SUPERVISION

The project will be executed by a Road Construction Unit of the Ministry of Works and Supplies.

1970/71 DEVELOPMENT ESTIMATES

APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE : NKHOTAKOTA/NKHATA BAY ROAD

RESPONSIBLE MINISTRY : WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969 : HEAD 85 ITEM 12

BRITISH AIDED PROJECT NO. : 41

1. PROJECT OFFICER : Execution by Ministry of Works and Supplies Road Construction Unit, by direct labour.

2. FINANCIAL DETAILS

(a) Details of Expenditure

Details of Expenditure	Notes	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
4. Roads and Bridges	(1)	20,000	82,000	88,181	-	170,181
TOTAL		20,000	82,000	88,181	-	170,181

(b) Notes on Expenditure

(1) Direct works construction costs by Ministry of Works and Supplies Road Construction Unit.

(c) Import Content

Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
6,000	25,000	26,000	-	51,000

(d) Expenditure by Region

All in Central and Northern Regions

3. LOCATION OF CONSTRUCTION

Lakeshore between Nkhotakota in Central Region and Nkhata Bay in the Northern Region.

1970/71 DEVELOPMENT ESTIMATES

PROJECT SUBMISSION

PROJECT TITLE : BUA BRIDGE (M1)

RESPONSIBLE MINISTRY : WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969 : NEW PROJECT

BRITISH AIDED PROJECT NO. : NEW PROJECT

RELATED PROJECTS : Nil

1. FINANCIAL SUMMARY

(a) Funds Requested

Category	Jan-Mar 1970	1970/71	1971/72	1972/73	TOTAL 3 Yrs
4. Roads & Bridges	-	25,000	35,000	-	60,000
TOTAL	-	25,000	35,000	-	60,000

(b) Non-British, Non-Malawi Expenditure

Nil

(c) Previous Expenditure

Nil

(d) Source of Finance

Proposed for U.K. Development Loan

2. PROJECT TARGET

To construct a 2 lane pre-stressed, post-tensioned bridge over the River Bua on the M1 between Lilongwe and Kasungu to replace. the existing structure.

Expected Completion Date March 1972

3. BACKGROUND INFORMATION

The only North-South transport corridor for the highland areas of Central and Northern Malawi is the M1 road from Lilongwe through Kasungu and Mzimba. The present bridge across the Bua River between Lilongwe and Kasungu is a serious physical impediment to the movement of goods on this route due to the restriction it imposes in width - 10' and height-12'. At present vehicles are restricted to 16 tons gross weight.

In 1970/72 the Dwangwa and Dwambazi Bridges are to be constructed by pre-stressing, and the necessary equipment is now being installed. As the new Bua Bridge lends itself to a similar design it would be advantageous both for cost and ease of construction if this bridge were constructed during the same period.

4. PROPOSED WORK 1970/73

To replace the existing Bua Bridge on the M1 between Lilongwe and Kasungu with a new two-lane structure (preferably pre-stressed, post-tensioned) of approximately 280' overall span and to re-align the road over approximately 2½ miles to obtain satisfactory approaches.

5. JUSTIFICATION FOR PROPOSED WORK

The existing structure over the Bua River, due to its substandard nature, imposes severe restrictions on the size of goods vehicles able to operate between the Central and Northern Regions. The construction of a Class I standard two-lane bridge will remove this serious impediment and enable heavier vehicles to operate, thus reducing haulage running costs.

In the National Transportation Plan for Malawi prepared by the Surveys and Research Corporation for the A.I.D. in 1964 it was pointed out that the two most serious physical impediments to the movement of goods and passengers over the main highways were the Matope and Bua bridges. The former was replaced in 1966.

With the anticipated increase in permissible vehicle axle loading from 7 to 8 tons in 1970 and the opening up to freer competition of the road haulage industry, both of which have been recommended in the recently published Malawi Transport Regulation Study undertaken by the Economist Intelligence Unit, it is essential that this last major physical impediment on the main road system be removed. There would be no incentive to transport owners in the Central and Northern Regions to obtain vehicles capable of carrying heavier loads if the Bua bridge is not replaced.

6. EXECUTION AND SUPERVISION

To be undertaken by direct labour by the Ministry of Works and Supplies.

1970/71 DEVELOPMENT ESTIMATES

APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE : BUA BRIDGE (M1)

RESPONSIBLE MINISTRY : WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969 : NEW PROJECT

BRITISH AIDED PROJECT NO : NEW PROJECT

1. PROJECT OFFICER : Secretary for Works and Supplies

2. FINANCIAL DETAILS

(a)

Details of Expenditure	Notes	Jan-Mar 1970	1970/71	1971/72	1972/73	TOTAL 3 Yrs
4. Roads and Bridges (W)	(1)	-	25,000	35,000	-	60,000
TOTAL		-	25,000	35,000	-	60,000

(W) = construction by Ministry of Works and Supplies by direct labour

(b) Notes on Expenditure

(1) Direct works construction cost.

(c) Import Content

Jan-Mar 1970	1970/71	1971/72	1972/73	TOTAL
-	4,000	3,000	-	7,000

(d) Breakdown of Expenditure by Region

All in Central Region

3. LOCATION OF CONSTRUCTION

Central Region - approx. 60 miles north of Lilongwe on the road M1 to Kasungu.

1970/71 DEVELOPMENT ESTIMATES

PROJECT SUBMISSION

PROJECT TITLE : LIWONDE-MONKEY BAY BITUMINISATION

RESPONSIBLE MINISTRY : WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969 : NEW PROJECT

BRITISH AIDED PROJECT NO. : NEW PROJECT

RELATED PROJECTS : A.I.D. Lakeshore Road

1. FINANCIAL SUMMARY

(a) Funds Requested

Category	Jan-Mar 1970	1970/71	1971/72	1972/73	TOTAL 3 Yrs	Residual Liability
4. Roads & Bridges	-	50,000	130,000	150,000	330,000	280,000
TOTAL	-	50,000	130,000	150,000	330,000	280,000

(b) Non-British, Non-Malawi Expenditure

Not expected.

(c) Previous Expenditure

Nil

(d) Source of Finance

Proposed for U.K. Development Loan.

2. PROJECT TARGET

To construct a 22 ft width bituminous surfaced carriageway to Class I standard between Liwonde and Monkey Bay.

Expected Completion Date 1974

3. BACKGROUND INFORMATION

This road was completed to Class I gravel standard in 1967 with the exception of a 5½ mile length which although constructed to Class I width still requires additional minor earthworks and additional culverting. A low cost sand seal experimental bituminous surface was carried out over 15½ miles of the road in the vicinity of Fort Johnston. The section of the Lakeshore between Fort Johnston - Monkey Bay is the main Malawi tourist area and has the largest tourist potential in the country. It is intended that the 81½ miles of road between Liwonde and Monkey Bay be brought up to Class I bitumen standard. This will require the provision of a sub-base and cement stabilised base prior to the application of a single chip seal.

4. PROPOSED WORK 1970/73

To raise by an average height of 3 ft. a 5½ mile section of road between Liwonde and Fort Johnston and construct additional drainage structures. To provide a 5" sub-base, a 6" cement stabilised base course, and a single chip seal to the existing road between Liwonde and Monkey Bay, a distance of 81½ miles, to bring the road up to Class I bitumen standard.

2/...

5. JUSTIFICATION FOR PROPOSED WORK

With the increasing importance of tourism and with the completion of the Zomba-Lilongwe road project in 1970/71, access to the main lakeshore holiday area between Fort Johnston and Monkey Bay/Cape Maclear where two new hotels are at present under construction, would be greatly facilitated if the Likwonde/Monkey Bay road was bituminised.

The Likwonde-Fort Johnston-Monkey Bay road will link up with the proposed A.1.D. lakeshore Road spur from Mua, approximately 20 miles south of Chipoka, and will thus complete the lakeshore Road and provide an alternate route along the lakeshore to Salima. With the construction of the Nacala rail link the road would provide a satisfactory connection with the lake Service at Monkey Bay.

Based on a 7% traffic growth rate per annum a rate of return of approx. 15% on the investment for the present traffic flow should be achieved. It has been calculated that improvement of the road would give a relatively high rate of economic return.

EXECUTION AND SUPERVISION	6s.
Ministry of Works and Supplies, by direct labour.	

1970/71 DEVELOPMENT ESTIMATES

APPENDIX TO PROJECT SUBMISSION.

PROJECT TITLE : LIWONDE-MONKEY BAY BITUMINISATION

RESPONSIBLE MINISTRY : WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969 : NEW PROJECT

BRITISH AIDED PROJECT NO. : NEW PROJECT

1. PROJECT OFFICER : Director of Roads, Ministry of Works and Supplies

2. FINANCIAL DETAILS

(a)

Details of Expenditure	Notes	Jan-Mar 1970	1970/71	1971/72	1972/73	TOTAL 3 Yrs	Residual Liability
4. Roads and Bridges	(1)	-	50,000(W)	130,000	150,000	330,000	280,000
TOTAL		-	50,000	130,000	150,000	330,000	280,000

(W) = construction by Ministry of Works and Supplies by direct labour.

(b) Notes on Expenditure

(1) Direct labour work construction cost.

(c) Import Content

Jan-Mar 1970	1970/71	1971/72	1972/73	TOTAL 3 Yrs.
-	15,000	25,000	30,000	70,000

(d) Breakdown of Expenditure by Region

All in Southern Region.

3. LOCATION OF CONSTRUCTION

Between Liwonde and Monkey Bay in the Southern Region.

5. JUSTIFICATION FOR PROPOSED PROJECT

With the increasing importance of [illegible] with the completion of the Zomba-Liwonde road project in 1970/71, access to the main Nacala where two new hotels are at present under construction at Fort Johnston and Monkey Bay will be greatly improved. Liwonde/Monkey Bay road and bituminised.

The Liwonde-Fort Johnston/Monkey Bay road will link with the proposed A.I.D. lakeshore road system to complete the lakeshore road south of Chipoka, and provide an alternate route along the Lakeshore. On completion of the Nacala rail link the road would provide a valuable service at Monkey Bay.

Based on a 7% traffic growth rate per annum a rate of return of approx. 15% on the investment for the present traffic flow should be It has been calculated that improvement will yield a second rate of return.

6. EXECUTION AND SUPERVISION

4. Roads and Bridges	by direct(I) labour: Ministry of Works and Supplies
TOTAL	-

(W) = construction by Ministry of Works and Supplies by direct labour

(I) Notes on Expenditure

(1) Direct labour work construction costs.

(2) Input Concept

Jan-Mar 1970	1970/71	1971/72	1972/73	TOTAL 3 Yrs.
-	15,000	25,000	30,000	70,000

(3) Breakdown of Expenditure by Region

All in Southern Region.

LOCATION OF CONSTRUCTION

Between Liwonde and Monkey Bay in the Southern Region.

1970/71 DEVELOPMENT ESTIMATES

PROJECT SUBMISSION

PROJECT TITLE	:	A.I.D. LAKESHORE ROAD
RESPONSIBLE MINISTRY	:	WORKS AND SUPPLIES
MALAWI DEVELOPMENT ESTIMATES 1969	:	HEAD 85 ITEMS 15, 16 & 69
RELATED PROJECTS	:	Other Lakeshore Road Projects, namely:- Karonga/Chiweta bitumenisation Chirumba/Chiweta road Rumpi/Lura/Chiweta road Nkhotakota/Nkhata Bay road Liwonde/Monkey Bay bitumenisation

1. FINANCIAL SUMMARY

(a) Funds Requested

Category	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
1 Design & Supervision	43,400	180,800	170,000	46,000	396,800
4 Roads & Bridges	435,500	529,800	404,000	159,800	1,093,600
6 Plant & Vehicles	302,000	603,000	53,000	47,000	703,000
TOTAL	780,900	1,313,600	627,000	252,800	2,193,400

(b) Non-British, Non-Malawi Expenditure — Not applicable

(c) Previous Expenditure

		Cumulative Total
1 Design and Supervision		
to 31/12/68	6,371	6,371
1969 Printed Estimates	91,670	
1969 Revised Estimates	30,000	
1969 Estimated Carry-Forward	Nil	
2 Roads and Bridges		
to 31/12/68	Nil	Nil
1969 Printed Estimates	665,000	
1969 Revised Estimates	109,480	
1969 Estimated Carry-Forward	Nil	
6 Plant and Vehicles		
to 31/12/68	Nil	Nil
1969 Printed Estimates	858,330	
1969 Revised Estimates	Nil	
1969 Estimated Carry-Forward	Nil	

Note: The Preliminary Engineering Survey was completed in 1968 at a total cost of £108,508.

(d) Source of Finance

	1969	Jan-Mar 1970	1970/71	Residual	Total
1 Design and Supervision					
A.I.D. Loan	30,000	43,000	180,000	216,000	469,000
A.I.D. Financed Local costs	Nil	100	200	Nil	*6,671
Local	Nil	300	600	Nil	900
TOTAL	30,000	43,400	180,800	216,000	*476,571
4 Roads and Bridges					
A.I.D. Loan	Nil	385,000	328,000	245,000	958,000
A.I.D. Financed Local costs	36,421	19,400	45,200	58,100	159,121
Local	73,059	31,100	156,600	260,700	**568,500
TOTAL	109,480	435,500	529,800	563,800	** 1,685,621
6 Plant and Vehicles					
A.I.D. Loan	Nil	300,000	600,000	95,000	995,000
A.I.D. Financed Local costs	Nil	Nil	Nil	Nil	Nil
Local	Nil	2,000	3,000	5,000	10,000
TOTAL	Nil	302,000	603,000	100,000	1,005,000
TOTAL - A.I.D. Loan	30,000	728,000	1,108,000	556,000	2,422,000
TOTAL - A.I.D. Financed Local Costs	36,421	19,500	45,400	58,100	*165,792
TOTAL - Local	73,059	33,400	160,200	265,700	**579,400
TOTAL PROJECT	139,480	780,900	1,313,600	879,800	3,167,192

* Including £6371 spent in 1968

** Including £47,041 spent in 1968

2. PROJECT TARGET

To provide a Class I bituminous sand seal road along the Lakeshore plain from Balaka to Salima, with a spur to Monkey Bay.

Expected completion date: 32 months from May 1970 giving a date of January, 1973.

3. BACKGROUND INFORMATION

Following an A.I.D. Engineering Survey the Malawi Government has entered into a loan agreement with the U.S. A.I.D. for the construction of this road which will form part of the southern portion of the Lakeshore Road. A camp has already been constructed at Ntakataka to accommodate supervisory and works personnel. Arrangements have been made to engage Messrs. Tippetts-Abbett-McCarthy-Stratton as consultants and Nello L. Teer Co., as the management firm for the project.

4. PROPOSED WORK 1970/73

Construction of a Class I road with a sand-seal bituminous surface from the M1 near Balaka to the M5 near Salima, with a spur from Mua to the M15 near Monkey Bay, a total distance of 126 miles.

/3.....

4. JUSTIFICATION FOR PROPOSED WORK

This project will provide an alternative to the existing central main road of the country and will link up at its Northern end with the Salima-Benga-Nkhotakota section of the Lakeshore road. It will give improved access to areas of cultivation both actual and potential and enable the more economical extraction of an increased amount of crops. The section of the road north of Golomoti will act as a spine road for the Salima Lakeshore Development Project.

5. EXECUTION AND SUPERVISION

The project will be managed by Nello L. Teer Co. reinforced with personnel from the Ministry of Works and Supplies. The Malawi Government will also contribute certain items of construction plant to supplement that to be bought under the loan agreement. Supervision will be provided by the consultants for the work, Messrs Tippetts-Abbett-McCarthy-Stratton. ("T.A.M.S.").

The project will be carried out under a Force Account which will subsequently benefit Malawi in that:-

(a) The items of plant and equipment purchased from the United States under the loan will become the property of the Malawi Government, and

(b) The project will be used as a training scheme for young Malawian plant operators, technicians and trainees of all ranks up to full professional level.

Item No.	Description	Cost
1	1 No. Shop, stores & equipment	15,000
2	1 No. Crane truck	9,000
3	3 No. Workshop trucks	4,400
4	1 No. Truck Tractor	11,600
5	1 No. 35 ton lowboy trailer	2,700
6	1 No. 25 ton lowboy trailer	1,600
7	1 No. Tandem truck, van body	8,000
8	4 No. 3,000 gal. water trucks	35,000
9	2 No. Platform dump trucks with hydraulic	52,200
10	10 No. 12 cubic yard dump trucks	81,000
11	11 No. Pick-up trucks	15,900
12	4 No. Pick-up trucks 4 wheel drive	5,100
13	2 No. Station Wagons	3,100
14	1 No. 270 h.p. crawler tractor	90,500
15	2 No. 150 h.p. " "	31,500
16	6 No. 14(2) wheel tractor scraper	170,000
17	1 No. 7 cubic yard wheel loader	12,700
18	2 No. Heavy motor grader	27,400
19	2 No. Loader-backhoe	17,900
20	1 No. Tandem disc harrow	1,900
21	1 No. Grid roller	5,000

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(d) Source of Finance

TOTAL - A.I.D. Loan	30,000			
TOTAL - A.I.D. Financed Local Costs	36,421			
TOTAL - Local	73,059			
TOTAL PROJECT	139,480			

* Including £6171 spent in 1968

** Including £47,041 spent in 1968

2. PROJECT TARGET

To provide a Class I bituminous sand seal road along the Lakeshore plain from Balaka to Salima, with a spur to Monkey Bay.

Expected completion date: 32 months from May 1970 giving a date of January, 1973.

3. BACKGROUND INFORMATION

Following an A.I.D. Engineering Survey the Malawi Government has entered into a loan agreement with the U.S. A.I.D. for the construction of this road which will form part of the southern portion of the Lakeshore Road. A camp has already been constructed at Mtakataka to accommodate supervisory and works personnel. Arrangements have been made to engage Messrs. Tippetts-Abbett-McCarthy-Stratton as consultants and Wells, Inc. Tear Co., as the management firm for the project.

4. PROPOSED WORK 1970/73

Construction of a Class I road with a sand-seal bituminous surface from the M1 near Balaka to the M5 near Salima, with a spur from Mua to the M15 near Monkey Bay, a total distance of 126 miles.

/1....

1970/71 DEVELOPMENT ESTIMATES

APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE: : A.I.D. LAKESHORE ROAD

RESPONSIBLE MINISTRY: : WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969: : HEAD 85 ITEMS 15, 16 & 69

1. PROJECT OFFICER : Secretary for Works and Supplies

Execution by "Force Account" under a Management contract and supervised by Consultants.

2. FINANCIAL DETAILS

(a) Details of Expenditure

	Notes	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
1 Design and Supervision	(1)	43,000	180,000	170,000	46,000	396,000
	(2)	100	200	-	-	200
	(3)	300	600	-	-	600
		43,400	180,800	170,000	46,000	396,800
4 Roads & Bridges	(1)	385,000	328,000	185,000	60,000	573,000
	(2)	19,400	45,200	42,500	15,600	103,300
	(3)	31,100	156,600	176,500	84,200	417,300
		435,500	529,800	404,000	159,800	1,093,600
6 Plant & Vehicles	(1)&(4)	300,000	600,000	50,000	45,000	695,000
	(3)	2,000	3,000	3,000	2,000	8,000
		302,000	603,000	53,000	47,000	703,000
TOTAL		780,900	1,313,600	627,000	252,800	2,193,400

(b) Notes on Expenditure

(1) A.I.D. Loan
(2) A.I.D. financed local costs
(3) Local resources
(4) Plant & Vehicle to be purchased from Loan.

Item No.	Description	Cost
1	1 Lot Shop tools & equipment	15,000
2	1 No. Grease Truck	9,000
3	3 No. Mechanics Trucks	4,400
4	1 No. Truck Tractor	11,600
5	1 No. 36 ton lowboy trailer	2,700
6	1 No. 25 ton lowboy trailer	1,600
7	1 No. Tandem truck. van body	8,000
8	4 No. 3,000 gal. water trucks	35,000
9	5 No. Platform dump truck with hydralift	52,200
10	10 No. 12 cubic yard dump truck	81,000
11	14 No. Pick-up trucks	15,900
12	4 No. Pick-up trucks 4 wheel drive	5,100
13	2 No. Station wagons	3,100
14	3 No. 270 h.p. crawler tractor	90,500
15	2 No. 120 h.p. " "	31,500
16	6 No. 14/20 wheel tractor scraper	170,000
17	1 No. 2 cubic yard wheel loader	12,700
18	2 No. Heavy motor grader	27,400
19	2 No. Loader-backhoe	17,900
20	1 No. Tandem disc harrow	1,900
21	1 No. Grid roller	5,000

2/...

22	2 No. Wedgefoot roller	21,800
23	3 No. 25 ton self-propelled roller	22,200
24	1 No. Vibratory roller, self-propelled	7,100
25	1 No. Spreader box	600
26	2 No. Combination crane/dragline W/attachments (1 to be truck-mounted)	61,200
27	1 No. Single acting diesel pile hammer w/leads	12,600
28	4 No. 16 S concrete mixer	11,000
29	1 Lot Wheel barrow scales	700
30	1 Lot office & Engineering Equipment	11,000
31	2 No. Bar benders and shears	3,700
32	5 No. 150 cubic foot per minute air compressors	19,200
33	2 No. 300 amp. diesel welders	5,400
34	1 Lot Miscellaneous tools and equipment	13,100
35	1 No. Drilling rig with ancillary equipment	6,400
36	1 Lot Pumps, vibrators, saws, light plants etc.	16,500
	Spare Parts	200,000
	Total including shipping to Beira	£995,000

(c) Import Content	Jan-Mar 1970	1970/71	1971/72	1972/73
	703,300	962,000	279,400	141,000

(d) Breakdown of Expenditure by Region		
	Southern Region	520,000
	Central Region	2,647,000
	Total Project	3,167,000

3. LOCATION OF CONSTRUCTION

Southern Region : From Mua to M15 near Monkey Bay.

Central Region : From M1 near Balaka to M5 near Salima.

1970/71 DEVELOPMENT ESTIMATES

PROJECT SUBMISSION

PROJECT TITLE	:	CHIRUMBA/CHIWETA ROAD
RESPONSIBLE MINISTRY	:	WORKS AND SUPPLIES
MALAWI DEVELOPMENT ESTIMATES 1969	:	HEAD 85 ITEM 17
RELATED PROJECTS	:	Lakeshore Road Projects, particularly Rumpi/Lura/Chiweta Road Karonga/Chiweta Bituminisation

1. FINANCIAL SUMMARY

(a) Funds Requested

Category	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
4 Roads & Bridges	25,000	265,000	275,000	-	540,000
TOTAL	25,000	265,000	275,000	-	540,000

(b) Non-British, Non-Malawi Expenditure: Not applicable

(c) Source of Finance: Federal German Republic Loan

2. PROJECT TARGET

To construct by contract a Class II gravel surfaced road from Chirumba to Chiweta in the Northern Region, a distance of approximately 20 miles.

Expected Completion date: March 1972

3. BACKGROUND INFORMATION

This project forms part of the Lakeshore Road. The section from Karonga southward to Chirumba was constructed to Class II gravel standard in 1965/66 with West German aid. Under the current agreement the Federal Republic of Germany will provide a loan for the construction of the next stretch of the road southwards from Chirumba as far as Chiweta, provided the Malawi Government will in 1970 start reconstructing the road from Chiweta through Lura to Rumpi in order to provide an all weather link with the northern section of the Lakeshore Road. If funds permit it is proposed to provide the road with a sand-seal bituminous surface in order to preserve the gravel base.

4. PROPOSED WORK 1970/73

To construct by contract 20 miles of Class II gravel road between Chirumba and Chiweta in the Northern Region.

5. JUSTIFICATION FOR PROPOSED WORK

This road will constitute part of the Lakeshore Road providing a direct link to Karonga in the north of the country. The Karonga district has large agricultural potential and may be the subject of a large land development scheme. The Chirumba/Chiweta road together with the all-weather link from Lura to Chiweta will also serve as a main road connection with Chirumba port - a sheltered harbour capable of development-and enable larger vehicles to travel direct from Rumpi to Karonga in all weather instead of the extra 76 miles via Chisenga and the Chanda Track. The route via Chiweta is at present restricted to light traffic.

6. EXECUTION AND SUPERVISION

The project will be carried out by contract under the control of the Ministry of Works and Supplies and directly supervised by a resident engineer of the staff of the Roads Department of the Ministry.

2 No.		2,800
3 No.	25 ton self-propelled roller	22,200
1 No.	Vibrator propelled	7,100
1 No.	Spreader box	600
2 No.	Excavation cranes/dragline W/attachments (i.e. as truck-mounted)	6,000
1 No.	Single acting diesel pile hammer w/leads	11,000
1 No.	Concrete mixer	1,000
1 No.	Wheel barrow scales	400
1 Lot	Miscellaneous Engineering Equipment	6,000
1 No.	Bender and shears	1,000
1 No.	Cubic foot per minute air compressors	19,200
2 No.	300 amp. diesel welders	3,400
1 Lot	Miscellaneous tools and equipment	6,400
1 No.	Drilling rig with ancillary equipment	6,400
1 Lot	Pumps, vibrators, light plant etc.	16,500

4 Roads & Bridges	25,000	265,000	275,000	-	540,000
Total including Imports	25,000	265,000	275,000	-	540,000
(a) Import Content	1970/71	1971/72	1972/73	Total	

(b) Pan-British, Non Malawi Expenditure: Not applicable

(c) Expenditure by Region

Southern Region	520,000
Central Region	1,167,000
Total Project	1,687,000

(d) Source of Finance: Federal German Republic Loan.

2. PROJECT TARGET

To construct by contract a Class II gravel surfaced road from Chirumba to Chiweta in the Northern Region, a distance of approximately 20 miles.

3. LOCATION OF CONSTRUCTION

Southern Region

Proposed Completion date: March 1972

3. BACKGROUND INFORMATION

This project forms part of the Lakeshore Road. The section from Karonga southward to Chirumba was constructed to Class II gravel standard in 1965/66 with West German aid. Under the current agreement the Federal Republic of Germany will provide a loan for the construction of the next stretch of the road southwards from Chirumba as far as Chiweta, provided the Malawi Government will in 1970 start reconstructing the road from Chiweta through Lura to Rumpi in order to provide an all weather link with the northern section of the Lakeshore Road. It funds permit it is proposed to provide the road with a sand-seal bituminous surface in order to preserve the gravel base.

4. PROPOSED WORK 1970/73

To construct by contract 20 miles of Class II gravel road between Chirumba and Chiweta in the Northern Region.

5. JUSTIFICATION FOR PROPOSED WORK

This road will constitute part of the Lakeshore Road providing a direct link to Karonga in the north of the country. The Karonga district has large agricultural potential and may be the subject of a large land development scheme. The Chirumba/Chiweta road together with the all-weather link from Lura to Chiweta will also serve as a main road connection with Chirumba port - a sheltered harbour capable of development and enable larger vehicles to travel direct from Rumpi to Karonga in all weather instead of the extra 76 miles via Chitipa and the Chipata Track. The route via Chiweta is at present restricted to light traffic.

6. EXECUTION AND SUPERVISION

The project will be carried out by contract under the control of the Ministry of Works and Supplies and directly supervised by a resident engineer of the staff of the Roads Department of the Ministry.

1970/71 DEVELOPMENT ESTIMATES

APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE : CHIRUMBA/CHIWETA ROAD

RESPONSIBLE MINISTRY : WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969 : HEAD 85 ITEM 17

1. PROJECT OFFICER : The Secretary for Works and Supplies

Execution by contract under a Resident Engineer from the staff of the Roads Department, Ministry of Works and Supplies.

2. FINANCIAL DETAILS

(a) Details of Expenditure	Jan–Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
4 Roads & Bridges	25,000	265,000	275,000	-	540,000
TOTAL	25,000	265,000	275,000	-	540,000

(b) Notes on Expenditure: Construction by contractor approved by both the Federal German Republic and Malawi Governments.

(c) Import Content	Jan–Mar 1970	1970/71	1971/72	1972/73
	20,000	180,000	185,000	-

(d) Breakdown of Expenditure by Region: All in Northern Region

3. LOCATION OF CONSTRUCTION

Northern Region, Chirumba/Chiweta Lakeshore – Karonga District.

1970/71 DEVELOPMENT ESTIMATES

PROJECT SUBMISSION

PROJECT TITLE:	:	KARONGA/CHIWETA BITUMINISATION
RESPONSIBLE MINISTRY:	:	WORKS AND SUPPLIES
MALAWI DEVELOPMENT ESTIMATES 1969:	:	NEW PROJECT
RELATED PROJECTS:	:	Chirumba/Chiweta Road

1. FINANCIAL SUMMARY

(a) Funds Requested

Category	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
4 Roads & Bridges	-	80,000	162,455	-	242,455
TOTAL	-	80,000	162,455	-	242,455

(b) Non-British, Non-Malawi Expenditure: Not applicable

(c) Previous Expenditure: Nil

(d) Source of Finance: Federal German Republic Loan

2. PROJECT TARGET

To provide a bitumen sand-seal carriageway from Karonga southward on the Karonga-Chiweta road.

3. BACKGROUND INFORMATION

This project forms part of the Lakeshore Road. The section of the road from Karonga to Chirumba was constructed to Class II gravel standard in 1965/66 with West German aid. Under the current agreement with the Federal Republic of Germany construction is commencing in 1970 of the Chirumba/Chiweta road by contract to a Class II gravel standard. With the balance of the Federal German Loans from the Karonga/Chirumba and Chirumba/Chiweta projects it is proposed to bitumenise the road from Karonga southwards to the extent of the balance from these two loans.

4. PROPOSED WORK 1970/73

To provide a bituminous sand-seal carriageway for the Karonga/Chiweta road southwards from Karonga.

5. JUSTIFICATION FOR PROPOSED WORK

It is the ultimate aim of the Malawi Government that eventually the whole length of the Lakeshore Road will be bitumen surfaced. However the urgency to carry out this bituminisation on the northern section of the Lakeshore road is greater in that due to the very limited sources of gravel a regular programme of regravelling is not possible. Thus in order to protect the initial gravel investment and prevent the running surface eventually reverting to earth it is essential that a protective bituminous sand-seal carriageway be provided to prevent further loss of gravel.

6. EXECUTION AND SUPERVISION

The project will be carried out by contract under the control of the Ministry of Works and Supplies and supervised by a resident engineer of the staff of the Roads Department of the Ministry.

KARONGA/CHITIMBA ROAD BITUMENISATION

1970/71 DEVELOPMENT ESTIMATES

PROJECT SUPERVISION

PROJECT TITLE: KARONGA/CHITIMBA BITUMENISATION

RESPONSIBLE MINISTRY: WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969: NEW PROJECT

RELATED PROJECTS: Chitimba/Chiweta Road

FINANCIAL SUMMARY

(a) Funds Requested

Category	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
4 Roads & Bridges	-	80,000	162,455	-	242,455
TOTAL	-	80,000	162,455	-	242,455

(b) Non-British, Non-Malawi Expenditure: Not applicable

(c) Previous Expenditure: Nil

(d) Source of Finance: Federal German Republic loan

PROJECT TARGET

To provide a bitumen sand-seal carriageway from Karonga eastwards on the Karonga-Chiweta road.

BACKGROUND INFORMATION

This project forms part of the Lakeshore Road. The section of the road from Karonga to Chitimba was constructed to Class II gravel standard in 1965/66 with West German aid. Under the current agreement with the Federal Republic of Germany construction is commencing in 1970 of the Chitimba/Chiweta road by contract to a Class II gravel standard. With the balance of the Federal German loans from the Karonga/Chitimba and Chitimba/Chiweta projects it is proposed to bitumenise the road from Karonga southwards to the extent of the balance from these two loans.

PROPOSED WORK 1970/73

To provide a bitumen sand-seal carriageway for the Karonga/Chiweta road southwards from Karonga.

JUSTIFICATION FOR PROPOSED WORK

It is the ultimate aim of the Malawi Government that eventually the whole length of the Lakeshore Road will be bitumen surfaced. However the urgency to carry out this bitumination on the northern section of the Lakeshore road is greater in that due to the very limited sources of gravel a regular programme of regravelling is not possible. Thus in order to protect the initial gravelwearment and prevent the running surface eventually reverting to earth it is essential that a protective bitumen sand-seal carriageway be provided to prevent further loss of gravel.

EXECUTION AND SUPERVISION

The project will be carried out by contract under the control of the Ministry of Works and Supplies and supervised by a resident engineer of the staff of the Roads Department of the Ministry.

1970/71 DEVELOPMENT ESTIMATES

APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE: : KARONGA/CHIWETA ROAD BITUMENISATION

RESPONSIBLE MINISTRY: : WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969: : NEW PROJECT

1. PROJECT OFFICER: : The Secretary for Works and Supplies. Execution by contract under a Resident Engineer from the staff of the Roads Department, Ministry of Works and Supplies.

2. FINANCIAL DETAILS

(a) Details of Expenditure

	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
4 Roads & Bridges	-	80,000	162,455	-	242,455
TOTAL	-	80,000	162,455	-	242,455

(b) Notes on Expenditure:

Construction by contractor approved by both the Federal German Republic and Malawi Government.

(c) Import Content: £120,000 approximately

(d) Breakdown of Expenditure by Region: All in Northern Region

3. LOCATION OF CONSTRUCTION

	Jan-Mar 1970	1970/71	1971/72	Total
Between Karonga and Chiweta - Northern Region Lakeshore	5,000	15,000	45,000	65,000
			15,000	35,000
TOTAL	5,000	15,000	45,000	35,000 100,000

PROJECT TARGET

To construct bridges over the Dwangwa and Dwambazi rivers in conjunction with the Nkhotakota/Nkhata Bay road project.

Expected completion date: February, 1972.

BACKGROUND INFORMATION

This project forms part of the Nkhotakota/Nkhata Bay road project. In January 1969 the Beit Trust made a grant for part of the funds to finance the construction of these two bridges by the Ministry of Works and Supplies by direct labour.

PROPOSED WORK 1970/71

To construct two-lane pre-stressed, post-tensioned bridges over the Dwangwa and Dwambazi rivers.

JUSTIFICATION FOR PROPOSED WORK

It is essential that these two bridges be constructed in order to gain access to the 26 mile central section of the Nkhotakota/Nkhata Bay road.

DESIGN AND SUPERVISION

These two bridges have been designed by the Ministry of Works and Supplies Design Department and will be constructed by the Ministry using direct labour.

1970/71 DEVELOPMENT ESTIMATES

PROJECT SUBMISSION

PROJECT TITLE : DWANGWA AND DWAMBAZI BRIDGES

RESPONSIBLE MINISTRY : WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969 : HEAD 85 ITEMS 18 & 80

RELATED PROJECTS : Nkhotakota/Nkhata Bay Road

1. FINANCIAL SUMMARY

(a) Funds Requested

Category	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
4 Roads & Bridges	15,000	45,000	35,000	-	80,000
TOTAL	15,000	45,000	35,000	-	80,000

(b) Non-British, Non-Malawi Expenditure: Not applicable

(c) Previous Expenditure:

		Cumulative Total
to 31/12/1968		Nil
1969 Printed Estimates	35,000	
1969 Revised Estimates	5,000	
1969 Estimated Carry-Forward	30,000	
of which: Jan-Mar 1970	15,000	
1970/71	15,000	

(d) Source of Finance

	1969	Jan-Mar 1970	1970/71	1971/72	Total
Beit Trust	Nil	10,000	35,000	20,000	65,000
Local	5,000	5,000	10,000	15,000	35,000
TOTAL	5,000	15,000	45,000	35,000	100,000

2. PROJECT TARGET

To construct bridges over the Dwangwa and Dwambazi rivers in conjunction with the Nkhotakota/Nkhata Bay road project.

Expected completion date: February, 1972.

3. BACKGROUND INFORMATION

This project forms part of the Nkhotakota/Nkhata Bay road project. In January 1969 the Beit Trust made a grant for part of the funds to finance the construction of these two bridges by the Ministry of Works and Supplies by direct labour.

4. PROPOSED WORK 1970/73

To construct two-lane pre-stressed, post-tensioned bridges over the Dwangwa and Dwambazi rivers.

5. JUSTIFICATION FOR PROPOSED WORK

It is essential that these two bridges be constructed in order to gain access to the 26 mile central section of the Nkhotakota/Nkhata Bay road.

6. EXECUTION AND SUPERVISION

These two bridges have been designed by the Ministry of Works andSupplies Design Department and will be constructed by the Ministry using direct labour.

1970/71 DEVELOPMENT ESTIMATES

PROJECT SUBMISSION

PROJECT TITLE:

RESPONSIBLE MINISTRY:

NATIONAL DEVELOPMENT ESTIMATES 1969

RELATED PROJECTS:

1. FINANCIAL SUMMARY

(a) Funds Required

Category	Jan–Mar 1970	1970/71	1971/72	1972/73	Total 3 Years
4 Roads & Bridges	15,000	45,000	35,000	–	80,000
TOTAL	15,000	45,000	35,000	–	80,000

(b) Non-British, Non-Malawi Expenditure: Not applicable

(c) Previous Expenditure:

	Jan–Mar 1970	1970/71	1971/72	Total
Cumulative Total 1969	Nil	10,000	35,000	65,000
Loans	5,000	5,000	20,000	35,000
Grants			15,000	
TOTAL	5,000	15,000	45,000	35,000
				100,000

(d) Sources of Finance

1969 Finished Estimates 35,000
1969 Revised Estimate 5,000
1969 Estimated Carry-Forward 30,000
of which: Jan–Mar 1970 15,000
1970/71 15,000

PROJECT TARGET

To construct bridges over the Bwanguwa and Dwambazi rivers in connection with the Nkhotakota/Nkhata Bay road project.

Expected completion date: February, 1972.

BACKGROUND INFORMATION

This project forms part of the Nkhotakota/Nkhata Bay road project. In January 1969 the Built Trust made a grant for part of the funds to finance the construction of these two bridges by the Ministry of Works and Supplies by direct labour.

PROPOSED WORK 1970/73

To construct two-lane pre-stressed, post-tensioned bridges over the Bwanguwa and Dwambazi rivers.

JUSTIFICATION FOR PROPOSED WORK

It is essential that these two bridges be constructed in order to gain access to the 26 mile central section of the Nkhotakota/Nkhata Bay road.

EXECUTION AND SUPERVISION

These two bridges have been designed by the Ministry of Works and Supplies Design Department and will be constructed by the Ministry using direct labour.

1970/71 DEVELOPMENT ESTIMATES

APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE	:	DWANGWA AND DWAMBAZI BRIDGES
RESPONSIBLE MINISTRY	:	WORKS AND SUPPLIES
MALAWI DEVELOPMENT ESTIMATES 1969	:	HEAD 85 ITEMS 18 & 80

1. PROJECT OFFICER

The Secretary for Works and Supplies.
Execution by direct labour.

2. FINANCIAL DETAILS

(a) Details of Expenditure

Details of Expenditure	Notes	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
4 Roads & Bridges	(1)	10,000	35,000	20,000	-	55,000
	(2)	5,000	10,000	15,000	-	25,000
TOTAL		15,000	45,000	35,000	-	80,000

(b) Notes on Expenditure

(1) - Beit Trust element £65,000

(2) - Local cost " £30,000

(c) Import Content

£13,500

(d) Expenditure by Region

All in Central Region.

3. LOCATION OF CONSTRUCTION

Central Region Lakeshore - north of Nkhotakota.

1970/71 DEVELOPMENT ESTIMATES

PROJECT SUBMISSION

PROJECT TITLE	:	RUMPI/LURA/CHIWETA ROAD
RESPONSIBLE MINISTRY	:	WORKS AND SUPPLIES
MALAWI DEVELOPMENT ESTIMATES 1969	:	NEW PROJECT
RELATED PROJECTS	:	Chirumba/Chiweta Road Nkhotakota/Nkhata Bay Road

1. FINANCIAL SUMMARY

(a) Funds Requested

Category	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
4 Roads & Bridges	-	20,000	80,000	70,000	170,000
TOTAL	-	20,000	80,000	70,000	170,000

(b) Non-British, Non-Malawi Expenditure: Not applicable

(c) Previous Expenditure: Nil

(d) Source of Finance: Local resources

2. PROJECT TARGET

To provide an all-weather road from Chiweta through Lura to Rumpi to complete an all-weather route linking Karonga District with the remainder of Malawi.

Expected Completion Date : 1972

3. BACKGROUND INFORMATION

This project forms a link between the Nkhotakota/Nkhata Bay and the Chirumba/Chiweta sections of the Lakeshore Road. Under the Loan Agreement with the West German Government for the Chirumba/Chiweta road project the Malawi Government is committed to upgrade to all-weather standard the route from Chiweta through Lura to Rumpi. The section of the Lakeshore Road from Karonga to Chirumba was constructed in 1965/67 with West German Aid and it is anticipated that the Chirumba/Chiweta section will be completed in early 1972.

4. PROPOSED WORK 1970/73

a) Improve the existing Rumpi/Lura road by additional drainage structures, minor earthworks and gravelling - a distance of approx. 30 miles.

b) Improve the existing road from Lura to the top of the Chiweta Escarpment by the provision of a 34' span bridge at Kambiya, minor earthworks, additional culverts and gravelling - a distance of approximately 8 miles.

c) Provide additional drainage structures and gravel from the top of the Chiweta escarpment to link up with the new Chirumba/Chiweta road - a distance of approximately 6 miles. Ease horizontal curves on the escarpment section. Provide a total of approximately 5 miles of bitumen surfacing to the steepest sections to minimise future maintenance, and guarantee all-weather access.

5. JUSTIFICATION FOR PROPOSED WORK

The road will link up with the northern section of the Lakeshore Road and will shorten the distance from Karonga to the south for heavy traffic by 76 miles, as well as providing an all-weather road to Karonga fro the first time without going through Zambia. Under the Loan Agreement with the Federal Republic of Germany for the Chirumba/Chiweta road project the Malawi Government is committed to "Develop and improve the existing road section Chiweta/Lura/Rumpi in such a way that it constitues a connecting road to the southern part of Malawi and that it is passable throughout the year (all-weather standard)."

The completion of the improvements to the Chiweta/Rumpi road will act as a stimulus to agricultural and economic development in the Karonga and Rumpi Districts.

The project will be carried out by a Road Construction Unit of the Ministry of Works and Supplies.

6. EXECUTION AND SUPERVISION

PROJECT MISSION

ESTIMATED TOTAL IT/OTEI

INTERNATIONAL FINANCING

LOCAL CURRENCY

ESTIMATED TOTAL

PROPOSED WORK TOTALS

a) Improve the existing gravel/earth road to additional standards primarily, minor realignments and gravelling - a distance of approx. 80 miles.

b) Improve the existing road from Luwa to the top of the Chitweta escarpment by the provision of a 3€, open ditches as drainage, minor earthworks, additional culverts and gravelling - a distance of approximately 8 miles.

c) Provide additional drainage structures and gravel from the top of the Chitweta escarpment to link up with the new Chitwapi/Chitweta road - a distance of approximately 5 miles. Some horizontal curves on the escarpment section. Provide a total of approximately 5 miles of bituminous surfacing to the escarpment section of the road.

maintain existing maintenance, and Contractor all-weather access.

IMPLEMENTATION FOR PROPOSED WORK

The road will link up with the northern section of the Lukasenpore Road and will shorten the distance from Katondwe to the coast for heavy traffic by 3€ miles, as well as providing an all-weather road to Katondwe Trading Centre and the first mile without going through Lumbia. Under the loan Agreement with the Federal Government it is proposed to upgrade the Chitwapi/Chitweta Road Project. The Malawi Government is committed to upgrade the existing road section Chitweta/Luwa/Lumbia in such a way that it can be maintained by Contractor using a conventional grader and tractor with trailer. The completion of the improvements to the Chitweta/Lumbia road will act as a stimulus for economic development in the Katondwe and Mpezi Districts.

1970/71 DEVELOPMENT ESTIMATES

APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE : RUMPI/LURA/CHIWETA ROAD

RESPONSIBLE MINISTRY : WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969 : NEW PROJECT

1. PROJECT OFFICER : The Secretary for Works and Supplies. Execution by Ministry of Works and Supplies Road Construction Unit, by direct labour.

2. FINANCIAL DETAILS

(a) Details of Expenditure

Details of Expenditure	Notes	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
4 Roads & Bridges	(1)	-	20,000	80,000	70,000	170,000
TOTAL		-	20,000	80,000	70,000	170,000

(b) Notes on Expenditure

(1) Direct works construction costs by Ministry of Works and Supplies Road Construction Unit.

(c) Import Content:

£100,000 approximately

(d) Breakdown of Expenditure by Region:

All in Northern Region.

3. LOCATION OF CONSTRUCTION

Northern Region - Rumpi District.

Rumpi/Lura/Chiwetu Road

1970/71 DEVELOPMENT ESTIMATES

APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE : RUMPI/LURA/CHIWETA ROAD

RESPONSIBLE MINISTRY : WORKS AND SUPPLIES

NATIONAL DEVELOPMENT ESTIMATES 1969 : "NEW PROJECT"

PROJECT OFFICER :

1. **FINANCIAL DETAILS**

(a) Details of Expenditure - Notes

	Jan-Mar 1970	1970/71	1971/72	1972/73	Total
4 Roads & Bridges (1)	-	20,000	80,000	70,000	170,000
TOTAL	-	20,000	80,000	70,000	170,000

(b) Notes on Expenditure

(1) Direct works construction costs by Ministry of Works and Supplies Road Construction Unit.

(c) Import Content:

£100,000 approximately

(d) Breakdown of Expenditure by Region:

All in Northern Region.

2. **LOCATION OF CONSTRUCTION**

Northern Region - Rumpi District.

3. **ALTERNATIVE PROJECTS**

The Secretary for Works and Supplies Execution by Ministry of Works and Supplies Road Construction Unit, by direct labour.

4. **DESIGN AND SUPERVISION**

The project will be carried out by a Road Construction Unit of the Ministry of Works and Supplies.

1970/71 DEVELOPMENT ESTIMATES

PROJECT SUBMISSION

PROJECT TITLE	:	TOWNSHIP ROADS
RESPONSIBLE MINISTRY	:	WORKS AND SUPPLIES
MALAWI DEVELOPMENT ESTIMATES 1969	:	NEW PROJECT
RELATED PROJECTS	:	NIL

1. FINANCIAL SUMMARY

(a) Funds Requested

Category	Jan–Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
4 Roads and Bridges	-	20,000	42,000	-	62,000
TOTAL	-	20,000	42,000	-	62,000

(b) Non-British, Non-Malawi Expenditure: Not applicable

(c) Previous Expenditure: Nil

(d) Source of Finance: Local Resources

2. PROJECT TARGET

To extend Consulate Road in Blantyre City by approximately 1¼ miles with a Class 1 24ft carriageway bitumen surfaced road.

Expected completion date: December, 1971.

3. BACKGROUND INFORMATION

City and Town Councils in Malawi have only very limited funds at their disposal to carry out road works, and Government assistance is required to construct main urban roads.

4. PROPOSED WORK 1970/73

To construct, by contract, to Class I bitumen standard a 1¼ mile extension to Consulate Road in Blantyre City and provide street lighting. The road will be maintained by the City Council.

5. JUSTIFICATION FOR PROPOSED WORK

Apart from in the Blantyre Industrial area and new Government housing estates there have been no new roads constructed in Blantyre City for a considerable number of years. In order to meet the demand for roads to other housing areas this extension to Consulate Road is required to givemore direct access to the town centre from both the low and high density areas near Chilomoni.

6. EXECUTION AND SUPERVISION

The design and preparation of contract documents will be carried out by the Design Department of the Ministry of Works and Supplies. Construction will be by contract under the supervision of the Roads Department of the Ministry.

1970/71 DEVELOPMENT ESTIMATES

PROJECT SUBMISSION

PROJECT TITLE : TORMARIN ROADS

RESPONSIBLE MINISTRY : WORKS AND SUPPLIES

RELATED DEVELOPMENT ESTIMATES 1969 : NEW PROJECT

RELATED PROJECTS : NIL

1. FINANCIAL SUMMARY

(a) Funds Requested

Category	1970 Jan–Mar	1970/71	1971/72	1972/73	Total 3 Yrs
4 Roads and Bridges	–	20,000	42,000	–	62,000
TOTAL	–	20,000	42,000	–	62,000

(b) Non-Capital, Non-Salary Expenditure: Not applicable

(c) Previous Expenditure: Nil

(d) Source of Finance: Local Resources

2. PROJECT TARGET

To extend Commulate Road in Blantyre City by approximately 1½ miles with a Class I Dbit centreway bitumen surfaced road.

Estimated completion date: December, 1971.

3. BACKGROUND INFORMATION

City and Town Councils in Malawi have only very limited funds at their disposal to carry out road works, and Government assistance is required to construct main urban roads.

4. PROPOSED WORK 1970/71

To construct, by contract, to Class I bitumen standard a 1½ mile extension to Commulate Road in Blantyre City and provide street lighting. The road will be maintained by the City Council.

5. JUSTIFICATION FOR PROPOSED WORK

Apart from in the Blantyre Industrial area and new Government housing estates there have been no new roads constructed in Blantyre City for a considerable number of years. In order to meet the demand for roads to other housing areas this extension to Commulate Road is required to give more direct access to the town centre from both the low and high density areas near Chilomoni.

6. EXECUTION AND SUPERVISION

The design and preparation of contract documents will be carried out by the Design Department of the Ministry of Works and Supplies. Construction will be by contract under the supervision of the Roads Department of the Ministry.

1970/71 DEVELOPMENT ESTIMATES

APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE : TOWNSHIP ROADS

RESPONSIBLE MINISTRY : WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969 : NEW PROJECT

1. PROJECT OFFICER : The Secretary for Works and Supplies. Execution by contract supervised by the Roads Department of the Ministry of Works and Supplies.

2. FINANCIAL DETAILS

(a) Details of Expenditure

	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
4 Roads & Bridges	-	20,000	42,000	-	62,000
TOTAL	-	20,000	42,000	-	62,000

(b) Notes on Expenditure

Construction by contract. Design and supervision by Ministry of Works and Supplies.

(c) Import Content

£20,000 approximately

(d) Expenditure by Region

All in Southern Region

3. LOCATION OF CONSTRUCTION

Blantyre City.

1970/71 DEVELOPMENT ESTIMATES

APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE : TOWNSHIP ROADS

RESPONSIBLE MINISTRY : WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969 : NEW PROJECT

1. PROJECT OBJECTIVE : The Secretary for Works and Supplies. Execution by contract supervised by the Roads Department of the Ministry of Works and Supplies.

FINANCIAL DETAILS

(a) Details of Expenditure

	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
4 Roads & Bridges	-	20,000	42,000	-	62,000
TOTAL	-	20,000	42,000	-	62,000

(b) Notes on Expenditure

Construction by contract. Design and supervision by Ministry of Works and Supplies.

(c) Import Content

£20,000 approximately

(d) Expenditure by Region

All in Southern Region

3. LOCATION OF CONSTRUCTION

Blantyre City.

1970/71 DEVELOPMENT ESTIMATES

PROJECT SUBMISSION

PROJECT TITLE : BLANTYRE/TETE ROAD, PRELIMINARY PLANNING

RESPONSIBLE MINISTRY : WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969 : NEW PROJECT

RELATED PROJECTS : NIL

1. FINANCIAL SUMMARY

(a) Funds Requested

Category	Jan–Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
8 Personal emoluments	–	10,900	9,466	9,466	29,832
9 Running expenses	–	32,000	30,000	28,168	90,168
TOTAL	–	42,900	39,466	37,634	120,000

(b) Non-British, Non-Malawi Expenditure: Not applicable

(c) Previous Expenditure: Nil

(d) Source of Finance: Local resources

2. PROJECT TARGET

To design, prepare contract documents and supervise the construction of a major international road link from Blantyre to Tete on a new alignment via Chikwawa.

Expected Completion Date

Planning to be completed by 31st August, 1971 and construction by 31st August, 1973.

3. BACKGROUND INFORMATION

The main international road link to the South at present crosses the Mozambique border near Mwanza. This route is extremely tortuous and it is proposed that the new international link should cross the Shire river by the Kamuzu Bridge at Chikwawa and then pass south of the Majete Game Reserve to the Mozambique border and on to Tete. This new route would shorten the overall distance to Tete by 17 miles.

4. PROPOSED WORK 1970/73

(a) To obtain aerial photographs and undertake ground control from which contoured mapping of the proposed route will be prepared.

(b) To undertake design and prepare tender documents. The work will be done by a special team of Engineers in the Design Department of the Ministry of Works and Supplies, since to carry out the design and subsequent contract supervision utilising consultants' services would cost at least £250,000.

5. JUSTIFICATION FOR PROPOSED WORK

The Salisbury/Tete road is virtually the only international route into Malawi from Southern Africa. Both Mozambique and Rhodesia have made improvements to this road within their borders and are planning further work in the future. The road will encourage tourist traffic into Malawi and with the proposed removal of controls governing the geographical operations of commerical vehicles in Malawi, as recommended by the recent Malawi Road Transport Regulation tudy carried out for the World Bank, commercial traffic should tend to increase on this route. Within Malawi this route will also assist:-

(a) Direct transport of sugar from Sucoma Sugar Estate to Blantyre by road instead of the present round-about route by rail, thus saving double handling.

(b) Expedite the export of cotton from the I.D.A. Lower Shire Rain-Fed Cotton Development Project in northern Chikwawa to the David Whitehead factory in Blantyre.

(c) Facilitate the development of future irrigation and other agricultural and pastoral projects in the Lower Shire Valley.

(d) Encourage tourist traffic to visit the Lower Shire Game Reserves.

EXECUTION AND SUPERVISION

Execution of the work will be by contract and the design, planning and supervision will be by the Ministry of Works and Supplies.

1970/71 DEVELOPMENT ESTIMATES

APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE : BLANTYRE/TETE ROAD, PRELIMINARY PLANNING

RESPONSIBLE MINISTRY : WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969 : NEW PROJECT

RELATED PROJECTS : Nil

1. PROJECT OFFICER : Secretary for Works and Supplies

2. FINANCIAL DETAILS

(a) Details of Expenditure

	Notes	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs.
8 Personal emoluments	(1)	-	10,900	9,466	9,466	29,832
9 Running expenses	(2)	-	32,000	30,000	28,168	90,168
TOTAL		-	42,900	39,466	37,634	120,000

(b) Notes on Expenditure

(1) The following staff would be employed on the project:-

1 Chief Civil Engineer (S7)
1 Superintending Civil Engineer (S8)
4 Civil Engineers (PO)

(2) Aerial photographs and mapping by contract. Design and planning by Ministry of Works and Supplies.

(c) Import Content

£15,000 approximately

(d) Expenditure by Region

All in Southern Region

3. LOCATION OF CONSTRUCTION

Blantyre-Chikwawa-Mozambique border.

1970/71 DEVELOPMENT ESTIMATES

PROJECT SUBMISSION

PROJECT TITLE : BLANTYRE AIRPORT - STAGE II

RESPONSIBLE MINISTRY : TRANSPORT AND COMMUNICATIONS

MALAWI DEVELOPMENT ESTIMATES 1969 : HEAD 85, ITEM 19

BRITISH AIDED PROJECT NO. : 42

RELATED PROJECTS : Blantyre Airport, Stage I, 1969 Estimates Head 85, Item 19

1. FINANCIAL SUMMARY

(a) Funds Requested

Category	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Years
2 Buildings	-	76,000	31,000	2,000	109,000
5 Other construction	-	4,000	85,000	116,000	205,000
7 Other Equipment	-	-	-	2,000	2,000
TOTAL	-	80,000	116,000	120,000	316,000

(b) Non-British, Non-Malawi Expenditure

Nil

(c) Previous Expenditure

		Cumulative Total
To 31.12.68	383,639	
1969 Printed Estimates	13,000	396,639
1969 Revised Estimates	8,819	392,458

UNDER REVISION

(d) Source of Finance

Proposed for U.K. Development Loan

2. PROJECT TARGET

To further develop the services and facilities at Blantyre Airport to meet increasing traffic and the introduction of larger and higher performance aircraft.

Expected Completion Date: March, 1973

3. BACKGROUND INFORMATION:

The Airport was opened in 1933 as a grass aerodrome and developed thereafter to provide facilities for regional air services connecting Blantyre with Salisbury. When Malawi became an independent State in 1964 Blantyre Airport was nominated as an international airport to be the main airport of entry into Malawi. The whole history of the airport development up to that time had been to provide for the minimum needs of the small aircraft providing the regional service to Salisbury. The airfield contours are substantially those of an aerodrome of the 1930's and the main runway laid in the 1950's and lengthened and strengthened in 1965/66 is still below current international standards in length, width and contour and is unfavourably orientated in relation to the prevailing winds and the nearby mountainous terrain. The aircraft parking area, despite extension in 1966/67, is insufficient in area, and in some sections strength, to accommodate the number

and types of aircraft now using it. Access to the parking area for aircraft above 30,000 lbs weight is limited to one taxiway, which imposes limitations on aircraft manoeuvring and on the full utilization of the parking area. The terminal building, a product of the early 1950's, was designed only to serve the regional traffic to and from Salisbury. It has been extensively altered since 1965 in an attempt to keep pace with the increasing passenger traffic and the requirements of Customs and Immigration authorities. The present position is aggravated because, by the nature of current affairs, Blantyre Airport is developing as an exchange point for travellers between Southern, Central and East Africa. This results in the coincidence of aircraft movements and the congestion of all airport facilities for relatively short periods in any one day.

The following quarterly statistics of passenger traffic by international scheduled services illustrate the growth rate over the past two and a half years and can be used as a base from which to project future growth.

Passengers embarked and disembarked by scheduled international services

1st Quarter	1967	10858
2nd "	"	10769
3rd "	"	13400
4th "	"	12323
1st Quarter	1968	13744
2nd "	"	13000
3rd "	"	16788
4th "	"	16124
1st Quarter	1969	17150
2nd "	"	18105
3rd "	"	22567

Additionally there are domestic scheduled, non-scheduled, international non-scheduled and private operators.

In the immediate future Super and Standard VC10, B727, B737, BAC 111 and HS.748 aircraft are expected to be using the airport. The new types will be the Super VC10, B727, B737 and HS 748 replacing Comet and Viscount aircraft.

Within the terminal building very little more can be done to accommodate the number of travellers and visitors using it. Extensions to the building, however unsatisfactory this method may be, are now inevitable. The alternative would be a new passenger handling building. The public car park requires extension and a remote radio receiver station is necessary.

4. PROPOSED WORK 1970/73

(a)	Extension and strengthening of the parking apron	£120,000
(b)	Strengthening and widening of taxiway	70,000
(c)	Extension of turning circles on main runway	4,000
(d)	Extension of terminal building	107,000
(e)	Extension of public car park and associated works	11,000
(f)	Telecommunications remote receiver station	4,000
	TOTAL	£316,000

5. JUSTIFICATION FOR PROPOSED WORK

To enable Blantyre Airport to deal safely and adequately with the types of aircraft and passenger traffic now foreseen.

6. EXECUTION AND SUPERVISION

The project would be executed by the Ministry of Works and Supplies on behalf of the Ministry of Transport and Communications.

1970/71 DEVELOPMENT ESTIMATES

APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE : BLANTYRE AIRPORT

RESPONSIBLE MINISTRY : TRANSPORT AND COMMUNICATIONS

MALAWI DEVELOPMENT ESTIMATES 1969 : HEAD 85 ITEM 19

PROJECT OFFICER : Director of Civil Aviation.

2. FINANCIAL DETAILS:

(a) Details of Expenditure

		Notes	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Years
2.	Buildings	(c)					
	Extension of Terminal Building	(1)	-	76,000	31,000	-	107,000
	Telecommunications Remote Receiver Station	(2)	-	-	-	2,000	2,000
				76,000	31,000	2,000	109,000
5	Other Construction	(c)					
	Extension & Strengthening parking apron	(3)	-	-	15,000	105,000	120,000
	Strengthening & Widening of Taxiway	(4)	-	-	70,000	-	70,000
	Extension of Turning Circles on Main Runway	(5)	-	4,000	-	-	4,000
	Extension of Public Car Park and Associated Works	(6)	-	-	-	11,000	11,000
				4,000	85,000	116,000	205,000
7	Other Equipment	(c)					
	Telecommunications Equipment Remote Receiver Station	(2)	-	-	-	2,000	2,000
	TOTAL			80,000	116,000	120,000	316,000

(c) = As costed by Ministry of Works and Supplies for Construction by Contract.

(b) Notes on Expenditure

(1) Extension of the Terminal Building 1970/72 £107,000

The terminal building was constructed in the 1950's to serve regional traffic between Blantyre and Salisbury. In 1964 when Malawi became an independent state Blantyre Airport was nominated as an international airport which required, inter alia, Customs and Immigration services. Extensive alterations to the building were carried out in 1965/66, primarily to provide for Customs and Immigration control, but the increase in traffic at peak times now results in heavy congestion which will get worse as traffic

/ eases

increases. Traffic statistics over the past 2½ years are given in the main section of this project statement. A further and final plan for re-modelling the interior of the building must be carried out to improve the concourse and airline offices. After that further solutions can only be sought by extensions of the building. The number of people using it has over-taxed the sewage disposal system and which must be re-designed.

The detailed improvements proposed are :-

(1) Improvement and extension of the existing concourse and airline offices and the provision of additional toilet accommodation.

(2) Construction of a new sewage system for the whole building.

(3) Extension of the building to provide a new international Arrivals Hall allowing the existing Arrival and Departure Halls to be combined in one Departure Hall and a public address system throughout the building.

(2) <u>Telecommunications Remote Receiving Station</u> 1972/73 £4,000

Telecommunications receiving equipments now situated in the terminal building suffer severe interference from overhead power cables, the Chileka telephone exchange also in the building, cars in the parking area and air conditioning equipment. A remote site is necessary. A building 30 ft. x 20 ft. is proposed to house equipment and staff. The ancillary services required are water, power control lines, access road and security fencing. The building would be within the present aerodrome reserve. £2,000 to be spent on building and balance £2,000 on telecommunications equipment.

(3) <u>Extension and Strengthening of Parking Apron</u>

1971/72 £15,000
1972/73 £105,000

The existing area for the parking of aircraft is of two separate constructions, the original area 320 ft. by 240 ft. is constructed to strength LCN 30. The later 1966 construction, 280 ft. by 240 ft. is to strength LCN 70. The total area is inadequate at peak traffic times and the limitations imposed by the low strength of the original area make aircraft manoeuvring and parking difficult. It is proposed to extend the parking area eastward by 200 ft. with a width of 240 ft. and strength LCN 70 and to strengthen the original parking area from LCN 30 to LCN 70.

(4) <u>Strengthening and Widening of Taxiway</u> 1971/72 £70,000

The low bearing strengths of the taxiway eastward from the aircraft parking area and that part of the secondary runway leading to the main runway are such that their use is limited to aircraft below 30,000 lbs weight. There is at present only one point of entry and exit for larger aircraft which makes manoeuvring difficult and prevents full use of the parking area. The taxiway to be widened from the present 50 ft. to 75 ft.

(5) <u>Extension of Turning Circles on main Runway</u> 1970/71 £4,000

The turning circles were designed to accommodate Standard VC10 aircraft and they are not large enough to enable the Super VC10 to turn without the risk of moving off on to soft earth. East African Airways plans to introduce Super VC10 aircraft on its services to Blantyre when Comet aircraft are withdrawn from service.

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(6) Extension of Public Car Park 1972/73 £11,000

The car parking area is insufficient at peak traffic times and an extension eastward by 200 ft. is required. The works to include the provision of a dias and spectator stand for special occasions, the demolition of a staff house of 1947 construction and its replacement by a DH 7 quarter, and out-door public lavatories.

(c) Import Content

£2,000 for telecommunications equipment and £38,000 for construction materials.

(d) Breakdown of Expenditure by Region

All expenditure other than the import content will be made in the Southern Region.

3. LOCATION OF CONSTRUCTION:

Chileka (10 miles from Blantyre)

(3) Extension and Strengthening of Parking Apron

1971/72	£15,000
1972/73	£105,000

The existing area for the parking of aircraft is of two separate constructions, the original area 220 ft. by 240 ft. is constructed to strength LCN 30. The later 1966 construction, 280 ft. by 240 ft. is to strength LCN 70. The total area is inadequate at peak traffic times and the limitations imposed by the low strength of the original area make aircraft manoeuvring and parking difficult. It is proposed to extend the parking area eastward by 200 ft. with a width of 240 ft. and strength LCN 70 and to strengthen the original parking area from LCN 30 to LCN 70.

(4) Strengthening and Widening of Taxiway 1971/72 £70,000

The low bearing strengths of the taxiway leading from the aircraft parking area and that part of the secondary runway leading to the main runway are such that their use is limited to aircraft below 30,000 lbs weight. There is at present only one point of entry and exit for larger aircraft which makes manoeuvring difficult and prevents full use of the parking area. The taxiway to be widened from the present 50 ft. to 75 ft.

(5) Extension of Turning Circles on Main Runway 1970/71 £4,000

The turning circles were designed to accommodate Standard VC10 aircraft and they are not large enough to enable the Super VC10 to turn without the risk of veering off on to soft earth. East African Airways plans to introduce Super VC10 aircraft in its services to Blantyre when Boeing aircraft are withdrawn from service.

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1970/71 DEVELOPMENT ESTIMATES

PROJECT SUBMISSION

PROJECT TITLE : RAILWAY CONSULTANCY SERVICES : LOAN TO MALAWI RAILWAYS LIMITED

RESPONSIBLE MINISTRY : TRANSPORT & COMMUNICATIONS

MALAWI DEVELOPMENT ESTIMATES 1969 : HEAD 85 ITEM 26

RELATED PROJECTS : Nacala Railway Construction Costs : Loan to Malawi Railways Limited.

1. FINANCIAL SUMMARY

(a) Funds Requested

Category	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Years
10 Special Expenditure	20,000	42,600	-	-	42,600
TOTAL	20,000	42,600	-	-	42,600

(b) Non-British, Non-Malawi Expenditure

Not applicable

(c) Previous Expenditure

		Cumulative Total
To 31.12.1960	Nil	Nil
1969 Printed Estimates	70,000	70,000
1969 Revised Estimates	120,000	120,000

(d) Source of Finance

Danish Loan

2. PROJECT TARGET

To ensure that the new Rail Link is properly constructed in accordance with its specifications.

Expected Completion Date

Before November, 1970

3. BACKGROUND INFORMATION

Under an agreement signed on 18th March, 1967, the Danish engineering consultancy firm of KAMPSAX were engaged by the Malawi Government to revise the engineering and route surveys of the proposed Nacala Rail Link, which had been produced by the Portuguese Government and the French engineering company C.F.E. The latter carried out an engineering survey of the route chosen by the Portuguese, with slight variation which did not affect the general routing.

When French financial support for the construction of the new rail link was not forthcoming KAMPSAX were engaged (using funds available under the first Danish Loan to Malawi) to revise the routing and prepare tender documentation. The agreement also provided for KAMPSAX to analyse all tenders submitted and allowed for further possible participation by KAMPSAX as consultants. The construction project is being financed under an

/agreement

agreement with the Industrial Development Corporation of South Africa and the South African group of Dorman Long/Roberts Construction were awarded the contract. It was considered desirable that consulting engineers should be retained by Malawi Railways Limited and KAMPSAX were an obvious choice by virtue of their early involvement in the project and the availability of Danish loan funds to meet most, if not all their fees.

4. PROPOSED WORK 1970/73

The construction of the new rail link is expected to be completed before November, 1970.

5. JUSTIFICATION FOR PROPOSED WORK

To satisfy Malawi Railways that the construction of the Nacala Rail Link, which involved considerable investment, is properly carried out in accordance with the tender specifications.

6. EXPENDITURE AND SUPERVISION

Payments to KAMPSAX are made through a deposit account in Copenhagen and the initial loan funds for the project have been on-lent to Malawi Railways Limited.

1970/71 DEVELOPMENT ESTIMATES

APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE : RAILWAY CONSULTANCY SERVICES : LOAN TO MALAWI RAILWAYS LTD.

RESPONSIBLE MINISTRY: : TRANSPORT AND COMMUNICATIONS

MALAWI DEVELOPMENT ESTIMATES 1969 : HEAD 85 ITEM 26

1. PROJECT OFFICER : Senior Assistant Secretary (Development), Ministry of Transport and Communications Headquarters.
The Consultants will work under the general control of the General Manager, Malawi Railways Ltd.

2. FINANCIAL DETAILS

(a) Details of Expenditure

Category	Notes	Jan-Mar 1970	1970/71	197/72	1972/73	Total 3 Years
10 Special Expenditure Consultants Fees	(1)	20,000	42,600	Nil	Nil	42,600
TOTAL		20,000	42,600	-	-	42,600

(b) Notes on Expenditure

Monthly invoices will be submitted by Consultants for acceptance and payment against a deposit account in Copenhagen.

(c) Import Content

Consultants fees £43,000, but see (d) below

(d) Breakdown of Expenditure by Region

Travelling and subsistence expenses, transport salaries for locally recruited staff engaged by the Consultants, office equipment and miscellaneous expenses incurred by the Consultants and included in their fee are estimated at £25,000 of total fees, i.e. £183,000 which will all be spent in the Southern Region.

3. LOCATION OF CONSTRUCTION

Not applicable - Consultancy Fee.

1970/71 DEVELOPMENT ESTIMATES

PROJECT SUBMISSION

PROJECT TITLE : NACALA RAILWAY CONSTRUCTION COSTS : LOAN TO MALAWI RAILWAYS LTD.

RESPONSIBLE MINISTRY : TRANSPORT & COMMUNICATIONS

MALAWI DEVELOPMENT ESTIMATES, 1969 : NEW PROJECT

RELATED PROJECTS : Railway Consultancy Services : Loan to Malawi Railways Ltd.

1. FINANCIAL SUMMARY

(a) Funds requested

Category	Jan-Mar 1970	1970/71	1971/72	1972/72	Total 3 Years
10. Special Expenditure	-	5,079,968	-	-	5,079,968
TOTAL	-	5,079,968	-	-	5,079,968

(b) Non-British, Non-Malawi Expenditure

Not applicable

(c) Previous Expenditure

		Cumulative Total
To 31.12.68	Nil	-
1969 Printed Estimates	Nil	-
1969 Revised Estimates	951,895	951,895

(d) Source of Finance

Loan from Industrial Development Corporation of South Africa on-lent to Malawi Railways Ltd.

2. PROJECT TARGET

(a) Construction of a new railway link from Nkaya Junction on the Blantyre-Salima line 10 miles south of Balaka to the Eastern Mocambique border en route to Novo Freixo, and ;

(b) the provision of rolling stock.

3. BACKGROUND INFORMATION

Work began on the construction of the 63 mile section within Malawi of the Nacala rail link on 18th May, 1968, and in terms of the contract, the contractors are required to complete the work within a period of 910 days. The Portuguese have confirmed that completion of their 49 mile section in Mocambique will coincide with the completion of Malawi's section. The work is presently ahead of schedule.

Construction by the Nacala Railway Company (a consortium of two South African Companies, Dorman Long and Roberts Construction Ltd.) is being undertaken in accordance with the design and specifications drawn up by the Danish firm KAMPSAX who have been retained by Malawi Railways Limited as Consulting Engineers to supervise the contractors. All the rolling stock included within the contract was delivered and paid for in 1969.

The loan negotiated by Malawi Government with the Industrial Development Corporation of South Africa is to meet 90% of the total construction costs and 90% of the cost of the rolling stock. The loan has been on-lent to Malawi Railways Limited.

4. PROPOSED WORK 1970/73

Completion of construction works which are expected to be completed by September, 1970. Contract allows for completion by November, 1970.

5. JUSTIFICATION FOR PROPOSED WORK

To provide a rail link to Nacala Port on the Indian Ocean as an alternative and more suitable sea port for most of Malawi's exports and imports. Nacala has a greater potential than Beira as a port to handle the larger ships now being constructed for international trade.

6. EXECUTION OF SUPERVISION

The contractors are under the direct supervision of Kampsax, the Danish firm of consulting engineers engaged by Malawi Railways Ltd. Kampsax also designed the new railway link and prepared the specifications and tender documentation etc.

1970/71 DEVELOPMENT ESTIMATES

APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE : NACALA RAILWAY CONSTRUCTION COSTS : LOAN TO MALAWI RAILWAYS LTD.

RESPONSIBLE MINISTRY : TRANSPORT & COMMUNICATIONS

MALAWI DEVELOPMENT ESTIMATES, 1969 : NEW PROJECT

1. PROJECT OFFICER : Senior Assistant Secretary (Development) Ministry of Transport & Communications H.Q.

The Contractors will work under the control of the General Manager, Malawi Railways Limited and his Consulting Engineers for the project, Messrs. KAMPSAX.

2. FINANCIAL DETAILS

(a) Details of Expenditure

Category	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs.
10. Special : Contract Price	Nil	5,079,968	-	-	5,079,968
TOTAL	Nil	5,079,968	-	-	5,079,968

(b) Note on Expenditure

This expenditure will relate to 90% of contract price payable on the practical completion of the project from loan funds held in South Africa.

(c) Import Content

Approximately 60% of the contract figure relates to imported equipment and materials etc. i.e. £3,050,000 (approx.).

The imported content relates to rolling stock; permanent way materials; steel works for bridges and piling; fittings for houses and telephonic equipment.

(d) Breakdown of Expenditure by Region

All expenditure related to Southern Region.

3. LOCATION OF CONSTRUCTION.

From Nkaya Junction near Balaka eastward to the Mocambique border.

1970/71 DEVELOPMENT ESTIMATES
PROJECT SUBMISSION

PROJECT TITLE: : KASUNGU AERODROME

RESPONSIBLE MINISTRY: : TRANSPORT AND COMMUNICATIONS - DEPT. OF CIVIL AVIATION

MALAWI DEVELOPMENT ESTIMATES 1969 : NEW PROJECT

RELATED PROJECTS: : Nil

1. FINANCIAL SUMMARY:-

(a) Funds Requested:

Category	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Years
2 Buildings	-	-	8,500	-	8,500
3 Water Supplies	-	-	1,800	-	1,800
5 Other construction	-	11,000	13,300	-	24,300
10 Special Expenditure	-	1,000	-	-	1,000
TOTAL	-	12,000	23,600	-	35,600

(b) Non-British, Non-Malawi Expenditure : N/A

(c) Previous Expenditure : Nil

(d) Source of Finance : Local Resources

2. PROJECT TARGET:

To construct an aerodrome at Kasungu suitable for use by aircraft of the Hawker Siddeley 748 type.

3. BACKGROUND INFORMATION:

A small landing ground exists at Kasungu which is only suitable for use by light aircraft, and another landing ground which can be used by DC3 aircraft has been constructed at Lifupa Game Reserve, 30 miles distant from Kasungu. With the prospect of increased passenger traffic for the game reserve and the growing importance of Kasungu as an agricultural centre it is proposed that a basic runway be constructed suitable for use by HS 748 aircraft shortly to be acquired by Air Malawi. The proposed new aerodrome would replace the existing landing grounds at Kasungu and Lifupa Game Reserve.

4. PROPOSED WORK 1970/7

To construct a laterite surface runway 3600 ft. in length within a flight strip 4000 ft. in length with an associated taxiway from the runway to an aircraft parking area. Also an access road, car park, waiting room with toilet, water bore-hole and two houses for maintenance staff.

5. JUSTIFICATION FOR PROPOSET WORK

To serve the developing Kasungu area and to provide easy access for tourists to the Lifupa Game Reserve.

6. EXECUTION AND SUPERVISION

Construction to be undertaken by the Ministry of Works and Supplies.

1970/71 DEVELOPMENT ESTIMATES

APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE: : KASUNGU AERODROME

RESPONSIBLE MINISTRY: : TRANSPORT AND COMMUNICATIONS

MALAWI DEVELOPMENT ESTIMATES, 1969 : NEW ITEM

1. PROJECT OFFICER:

Director of Civil Aviation

2. FINANCIAL DETAILS:

(a) Details of Expenditure:

	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Years
2 Buildings (W)					
Amenities Building	-	-	3,400	-	3,400
Housing Staff	-	-	2,700	-	2,700
Operations Building	-	-	2,400	-	2,400
	-	-	8,500	-	8,500
3 Water Supplies (W)	-	-	1,800	-	1,800
5 Other Construction (W)					
Runway, Strip, etc.	-	11,000	11,000	-	22,000
Access Roads & Car Park	-	-	1,000	-	1,000
Works Maintenance Yard	-	-	500	-	500
Fencing	-	-	800	-	800
	-	11,000	13,300	-	24,300
10 Special Expenditure					
Compensation	-	1,000	-	-	1,000
TOTAL	-	12,000	23,600	-	35,600

(W)= As costed by Ministry of Works & Supplies for construction by Ministry of Works and Supplies.

3. IMPORT CONTENT

Equipment, materials £4,000

4. BREAKDOWN OF EXPENDITURE BY REGION

Other than the import content all to be spent in the Central Region.

5. LOCATION

KASUNGU district near Kasungu Boma.

HEAD 86

WATER SUPPLIES AND SANITATION

1970/71 DEVELOPMENT ESTIMATES
PROJECT SUBMISSION

PROJECT TITLE	:	MUDI RIVER WATER BOARD DEVELOPMENT
RESPONSIBLE MINISTRY	:	TRADE AND INDUSTRY
MALAWI DEVELOPMENT ESTIMATES, 1969	:	HEAD 86 ITEMS 1 AND 2.
BRITISH AIDED PROJECT NO.	:	54
RELATED PROJECTS	:	All Projects in the Blantyre/Limbe area.

1. FINANCIAL SUMMARY

(a) Funds Requested

Category	Jan-Mar 1970	1970/71	1971/72	1972/73	TOTAL 3 YRS
2 Buildings*	1,500	15,500	5,000	-	20,500
5 Other Construction	3,000	75,000	86,900	46,000	207,900
6 Plant & Vehicles	750	550	-	-	550
7 Other Equipment	32,200	27,300	30,000	50,000	107,300
8 Personal Emoluments	1,100	4,300	2,500	3,500	10,300
9 Running Expenses	100	600	600	500	1,700
TOTAL	38,650	123,250	125,000	100,000	348,250
* 21 Houses	1,500	3,000	5,000	-	8,000
22 Other Buildings	-	12,500	-	-	12,500

(b) Non-British, Non-Malawi Expenditure

The Board wishes to purchase asbestos cement piping costing approximately £25,000 in Southern Africa since it is undesirable to ship this type of piping from the U.K. due to the possibility of pipes being damaged during shipment as cracks in the pipes may not become apparent until after they have been laid and put under pressure. Incidentally this would also result in a financial saving.

(c) Previous Expenditure

		Cumulative Total
To 31/12/68	Nil	Nil
1969 Printed Estimates	145300	
1969 Revised Estimates	138100 (plus £54,700 re-allocation from 1968)	
1969 Estimated Carry-forward	61900	
of which Jan-Mar 1970	38650	
1970/71	23250	

2. PROJECT TARGET

To increase the capacity of the Board's water supply installations in order to meet the rising demand for water in the City of Blantyre and adjacent areas.

Expected Completion Date

Continuing Project.

2/...

3. BACKGROUND INFORMATION

The Mudi River Water Board extracts water from the Shire River and from local dams to supply potable water to the City of Blantyre and surrounding districts. Water consumption to 31/12/68 increased at the rate of 20% per annum due to rising demand for commercial, industrial and domestic purposes. The project provides for additional pumping equipment and extensions to works to meet this increasing demand and for a small number of staff houses for additional staff required to operate the larger installations. Work commenced in 1968 although there were no payments to contractors or reimbursements to the Board until 1969.

4. PROPOSED WORK 1970/73

(a) During 1969 an order was placed with the consent of the Treasury to purchase 1-3 m.g.d. intake pump and 2-2 m.g.d. clear water pumps for delivery in 1970 costing £40,469. This is a commitment which will cost in total approximately £45,000 including installation and inspection fees. Provision has been made to cover this expenditure (£28,000 Jan/Mar 1970 and £17,000 1970/71).

(b) The following sums will be required to meet retention money and installation costs of equipment delivered in 1969:-

(i)	1-3 m.g.d. intake and 1-2 m.g.d. clear water pump-	retention money	£2,200
		installation	1,300
(ii)	Pumps -	installations & pipes	7,000
(iii)	Soche Pump -	installation	1,000
(iv)	Transformers -	installation and cabling	3,000

(c) Design work is being finalized for the treatment plant for Walker's Ferry and Mudi Works and three settling tanks at Mudi Works have been modified. Construction of two sets of reinforced concrete settling tanks and filters at Walker's Ferry will commence in 1970/71 and another two during 1971/72. The extension to Mudi Works will be phased over the same period. Orders are being placed for a concrete mixer, a dumper and a vibrator for use on this work.

(d) There has been a delay in mains extensions due to the high quotations for asbestos cement piping received from firms in the U.K. If authority to purchase piping in Southern Africa is given this part of the programme can proceed as planned.

(e) Two Senior staff houses are required at Walker's Ferry and two at Chileka. They are estimated to cost £2,500 each excluding land.

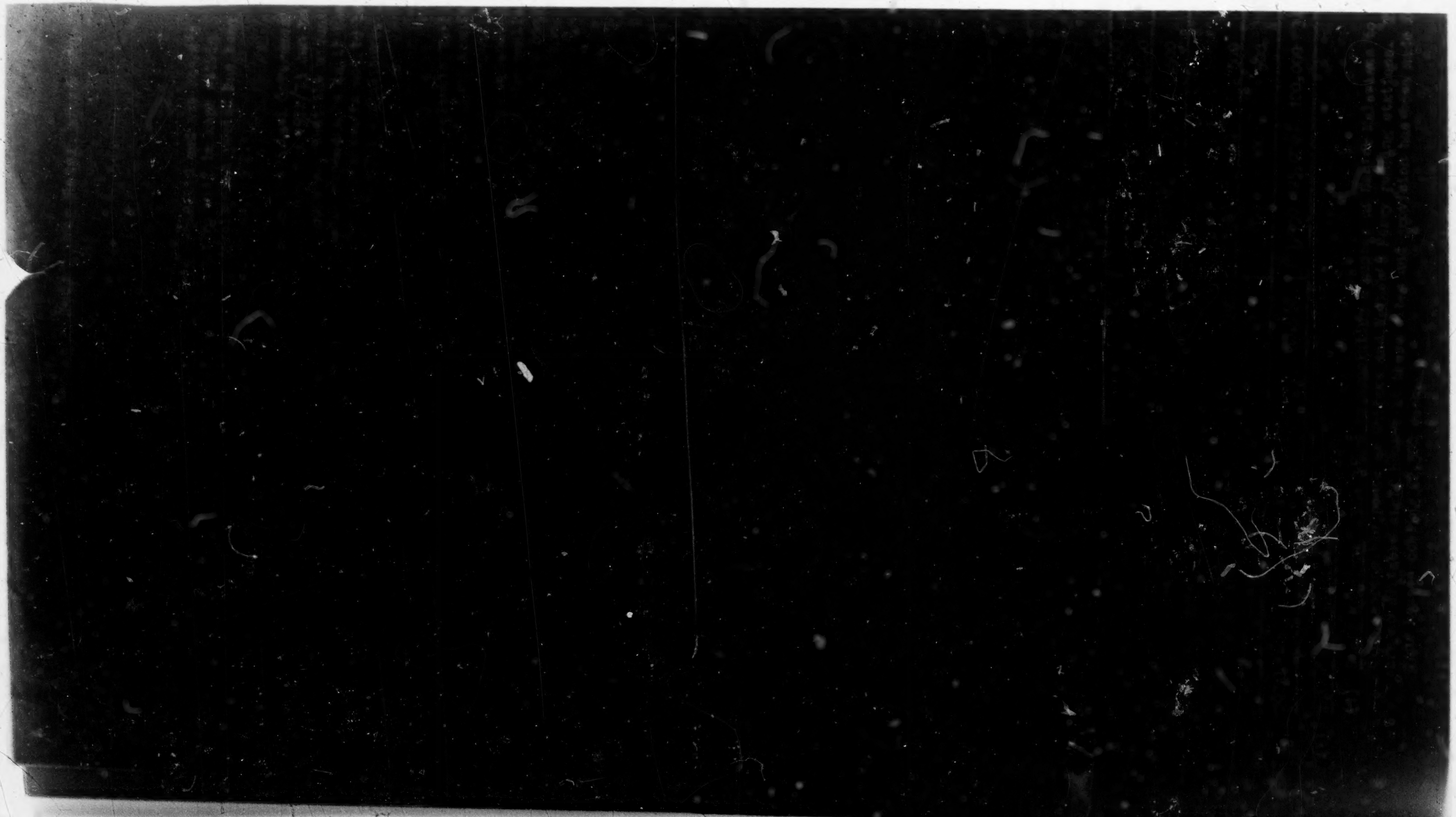
5. JUSTIFICATION FOR PROPOSED WORK

Water consumption in the Board's area has continued to increase although the rate of increase has tended to fall after the high consumption in 1968 which was a dry year. After completion of the work programmed to 31/3/71 the Board will be able to produce a reliable yield of water from all sources as follows:-

	Reliable Average	Reliable Peak months
Walker's Ferry Scheme	4.50 m.g.d.	4.50 m.g.d.
Local Dams	0.50 m.g.d.	1.25 m.g.d.
Total	5.00 m.g.d.	5.75 m.g.d.

It has been found necessary to reduce the quantity which can be considered a reliable yield from local dams in order to maintain the same ratio between water held in reserve and total consumption. The experience of the yield obtained after the very poor rains of 1968 has also made this reduction advisable. It is anticipated that demand will increase by 12½% and will be as follows:-

	Average	Peak month
1969	3.25	4.00
1970	3.66	4.50
1971	4.12	5.06
1972	4.62	5.70

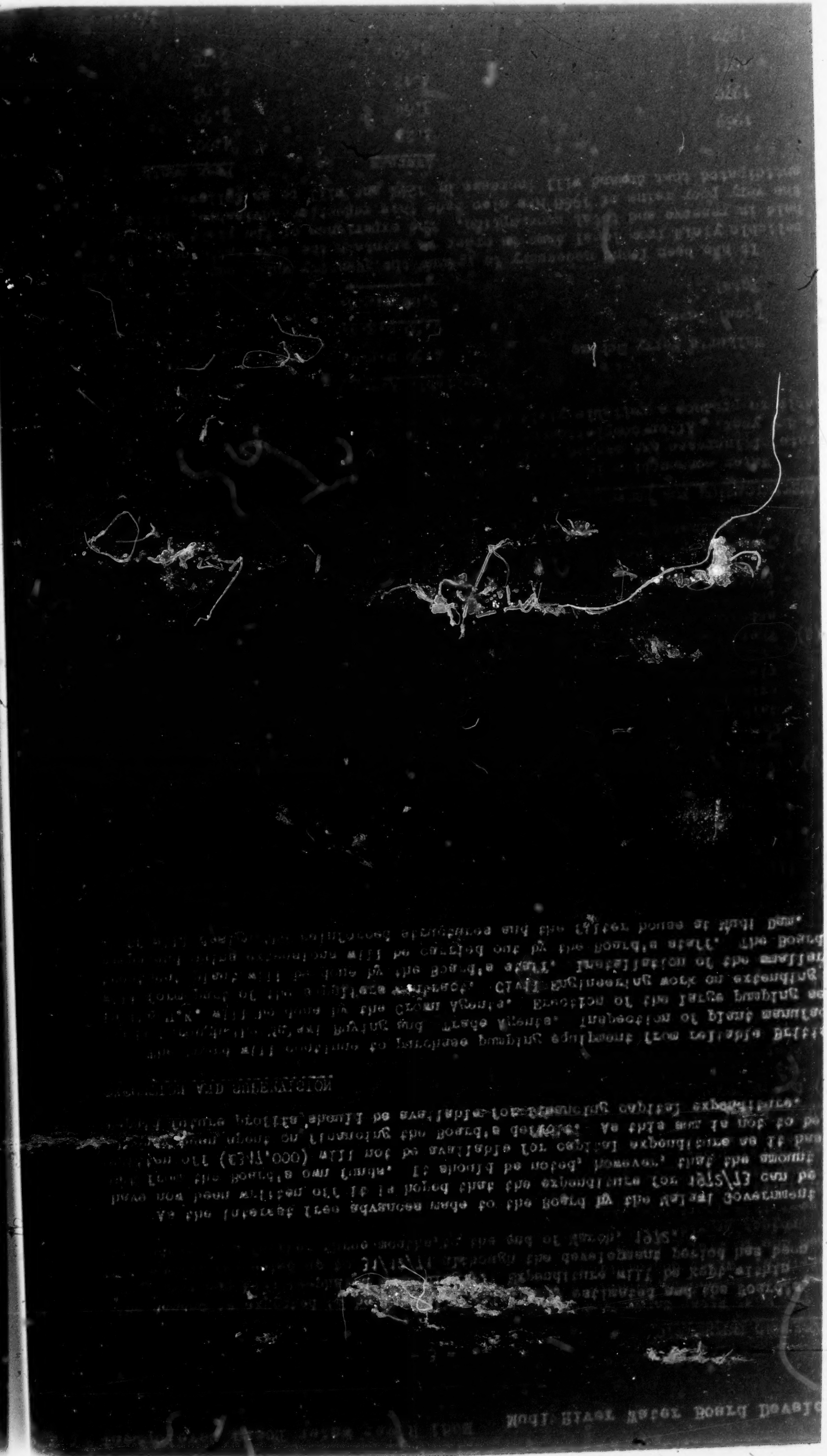


The demand is expected to be less than originally estimated and the Board's programme has been re-phased accordingly. Expenditure will be kept within the amount requested up to 31/12/71 although the development period has been extended for a further three months, to the end of March, 1972.

As the interest free advances made to the Board by the Malawi Government have now been written off it is hoped that the expenditure for 1972/73 can be met from the Board's own funds. It should be noted, however, that the amount written off (£347,000) will not be available for capital expenditure as it has already been spent on financing the Board's deficit. As this sum is not to be repaid future profits should be available for financing capital expenditure.

EXECUTION AND SUPERVISION

The Board will continue to purchase pumping equipment from reliable British firms through the Malawi Buying and Trade Agents. Inspection of plant manufactured in the U.K. will be done by the Crown Agents. Erection of the large pumping sets will form part of the suppliers contract. Civil Engineering work on extending the treatment plant will be done by the Board's staff. Installation of the smaller pumps and mains extensions will be carried out by the Board's staff. The Board's staff will design the reinforced structures and the filter house at Mudi Dam.



1970/71 DEVELOPMENT ESTIMATES
APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE : MUDI RIVER WATER BOARD DEVELOPMENT
RESPONSIBLE MINISTRY : TRADE AND INDUSTRY
MALAWI DEVELOPMENT ESTIMATES, 1969 : HEAD 86 ITEMS 1 AND 2
BRITISH AIDED PROJECT NO. : 54

1. PROJECT OFFICER : The Engineer/Manager, Mudi River Water Board.

2. FINANCIAL DETAILS

(a) Details of Expenditure

Details of Expenditure	Notes	Jan-Mar 1970	1970/71	1971/72	1972/73	TOTAL 3 Yrs.
2 Buildings						
Staff Housing	(1)	1,500	3,000	5,000	-	8,000
Chemical House Mudi	(2)	-	12,500	-	-	12,500
		1,500	15,500	5,000	-	20,500
5 Other Construction						
Settling Tanks and Filters	(3)	2,000	43,000	47,400	20,000	100,400
Mains Extensions	(4)	1,000	30,000	14,500	11,000	55,500
Tanks and Reservoirs	(5)	-	2,000	25,000	25,000	52,000
		3,000	75,000	86,900	46,000	207,900
6 Plant and Vehicles						
Pickup	(6)	750	-	-	-	-
Plant	(7)	-	550	-	-	550
		750	550	-	-	550
7 Other Equipment						
Pumps, Walker's Ferry & Chileka	(8)	30,200	18,300	30,000	50,000	98,300
Pumps, other pump stations	(9)	2,000	5,000	-	-	5,000
Soche pump	(10)	-	1,000	-	-	1,000
Transformers	(11)	-	3,000	-	-	3,000
		32,200	27,300	30,000	50,000	107,300
8 Personal Emoluments						
Technical Staff	(12)	1,100	1,800	-	1,500	3,300
Works Supervisor	(13)	-	2,500	2,500	2,000	7,000
		1,100	4,300	2,500	3,500	10,300
9 Running Expenses						
Transport & Travelling	(14)	100	600	600	500	1,700
		100	600	600	500	1,700
TOTAL		38,650	123,250	125,000	100,000	348,250

(b) Notes on Expenditure

(1) Staff Housing: The Board is appointing a number of Senior Malawians to take over responsible posts at Chileka and Walker's Ferry pumping stations. There are no suitable staff houses at these sites and provision has been made for four houses costing £2,500 each.

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(2) Chemical House Mudi: Extension to Mudi Works to house additional treatment plant.

(3) Settling Tanks and Filters: The settling tanks and filters at Walker's Ferry will be extended to treat up to 6 m.g.d. and at Mudi to treat about 3 m.g.d. Additional storage will be provided at Mudi Works.

(4) Mains Extensions: Provision has been made to include the purchase of asbestos cement piping costing £25,000 from non-British suppliers. The remaining provision represents cost of labour, transport, loose tools and plants.

(5) Tanks and Reservoirs: A tank will be required to boost supplies in the Bvumbwe/Chigumula area.

(6) Pickup: The Board will be constructing the tanks and filters by direct labour and a vehicle will be necessary for supervision of the work.

(7) Plant: Provision has been made for compacting plant and shuttering for reinforced concrete work.

(8) Pumps - Walker's Ferry and Chileka: The following sums will be required to meet retention money for new pumps and installation costs of equipment delivered in 1969.

	Jan-Mar 1970	1970/71
1-3 m.g.d. intake pump and 2-2 m.g.d. clear water pumps		
- installation	2,200	1,300
- retention money	28,000	17,000

(9) Pumps - Other Pumping Stations: Provision has been made for the cost of erection and pipe-work for the pumps already purchased and expected to be delivered in early 1970.

(10) Soche Pump: Erection costs and cabling for transformers purchased for delivery in early 1970.

(11) Transformers: Erection costs and cabling for transformers purchased for delivery in early 1970.

(12) Technical Staff: Provision for the cost of technical staff, including a volunteer under the V.S.O. scheme who will be designing settling tanks and filters.

(13) Works Supervisor: Temporary employee to supervise building of settling tanks and filters.

(14) Transport and Travelling: Expenses of staff under (12) and (13) above.

(c) Import Content

£105,000 overall for roofing sheeting, door locks, sanitary fittings, piping, a motor vehicle, pumps, reinforcing steel, a dumper and cables.

(d) Breakdown of Expenditure by Regions: All expenditure in the Southern Region.

LOCATION OF CONSTRUCTION: Walker's Ferry, Chileka and Blantyre/Limbe. All work will be carried out by the Mudi River Water Board, either by direct labour or through contractors.

1970/71 DEVELOPMENT ESTIMATES
PROJECT SUBMISSION

PROJECT TITLE : LOAN TO BLANTYRE CITY (SOCHE SEWERAGE)

RESPONSIBLE MINISTRY : LOCAL GOVERNMENT

MALAWI DEVELOPMENT ESTIMATES, 1969 : HEAD 86, ITEM 3

BRITISH AIDED PROJECT NO. : 70

RELATED PROJECTS : (i) Loan to Blantyre City:
(Blantyre Sewerage I)
German Loan

(ii) Loan to Blantyre City:
(Blantyre Sewerage II)
- New Project.

1. FINANCIAL SUMMARY

(a) Funds Requested

Cost Centre	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
1 Design and Supervision	2,000	3,000	-	-	3,000
5 Other Construction	28,000	53,000	-	-	53,000
Total	30,000	56,000	-	-	56,000

(b) Non-British, Non-Malawi Expenditure : Nil

(c) Previous Expenditure

		Cumulative Total
to 31/12/68	Nil	Nil
1969 Printed Estimates	104,500	
1969 Expected Expenditure	33,000	
1969 Estimated Carry-Forward	62,500	
of which Jan-Mar. 1970	30,000	
1970/71	32,500	

(d) Source of Finance : U.K. Development Loan

2. PROJECT TARGET

To provide trunk sewer and additional sewerage works capacity for the Consortium-financed Malawi Housing Corporation development programme commenced in 1968 at Soche, Blantyre. Approximately 2,160 houses will be built under this scheme between 1969 and 1971 and a further 300 will be completed by March, 1972 - a total of 2,160 houses to be given sewage-disposal facilities.

Expected Completion Date: 31st July, 1970

3. BACKGROUND INFORMATION

Blantyre City Council operates three separate sewerage works whose present capacity related to flows is:-

	Capacity (million gallons per day)	Flow (million gallons per day)
Blantyre (main works)	0.54	0.37
Soche	0.40	0.37
Limbe	0.14	0.08
TOTAL	1.08	0.82

From German funds the City Council is constructing and extending the main scheme. A part from this the most important requirement is to extend the facilities for Soche as outlined in the Project Target above (para. 2). On completion of these two schemes at the end of 1970 capacities and flows will be:

	Capacity (million gallons per day)	Flow
Blantyre	0.59	0.44
Soche	0.90	0.50*
Limbe	0.14	0.10
TOTAL	1.63	1.04

*The flow at Soche will continue to increase up to 1972 when the Malawi Housing Corporation housing scheme is completed.

The City Council is expecting rapid expansion in sewage flows particularly because of industrial effluents. For this reason a new scheme is now being planned.

4. PROPOSED WORK, 1970/73

Construction commenced on 1st September, 1969; approximately 55% of expenditure is expected before 1st April, 1970. The schedule of all estimated expenditure is as follows:

	On Civil, Mechanical Electrical and Contingency items	On Design and Supervision	Total
	£		
1969	30,000	3,000	33,000
1970 1st Quarter	28,000	2,000	30,000
1970/71	53,000	3,000	56,000
Grand Total	£111,000	£8,000	£119,000

5. JUSTIFICATION FOR PROPOSED WORK

This scheme is an essential prerequisite to the Malawi Housing Corporation's current building programme in Blantyre. Connection fees and monthly service charges will be levied on users.

6. EXECUTION AND SUPERVISION

The project will be carried out by contractors for the Blantyre City Council.

1970/71 DEVELOPMENT ESTIMATES
APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE : LOAN TO BLANTYRE CITY (SOCHE SEWERAGE)

RESPONSIBLE MINISTRY : LOCAL GOVERNMENT

MALAWI DEVELOPMENT ESTIMATES, 1969 : HEAD 86, ITEM 3

BRITISH AIDED PROJECT NO. : 70

1. PROJECT OFFICER

The Under Secretary, Ministry of Local Government.

Execution by Con tractors working for Blantyre City Council.

2. FINANCIAL DETAILS

(a) Details of Expend[illegible]

	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yr
1 Design & Supervision (C) Consultants' Fees, Resident Supervi[illegible] etc.	2,000	3,000	-	-	3,000
5 C[illegible] Construction (C) Preliminary & General Civil, Electrical and Mechanical and Contingencies	28,000	53,000	-	-	53,000
TOTAL	30,000	56,000	-	-	56,000

(C) = Costed by consultants for construction by contractors.

(b) Notes on Expenditure

(1) The construction costs include £2,000 for a collector sewer included in the Malawi Housing Corporation's building project.

(2) Payments will be made against payment certificates submitted by the City Councils consultants (Brian Colquhoun, Hugh O'Donnell and Partners).

(c) Import Content

Not more than £11,000

(d) Breakdown of Expenditure by Region

All expenditure will take place in the Southern Region

3. LOCATION OF CONSTRUCTION

The scheme is entirely contained in the area of the City of Blantyre.

1970/71 DEVELOPMENT ESTIMATES

PROJECT SUBMISSION

PROJECT TITLE	:	LIKUNI WATER SUPPLY
RESPONSIBLE MINISTRY	:	WORKS AND SUPPLIES
MALAWI DEVELOPMENT ESTIMATES 1969	:	HEAD 86 ITEMS 4 & 8
BRITISH AIDED PROJECT NO.	:	78
RELATED PROJECTS		District Water Supplies

1. FINANCIAL SUMMARY

(a) Funds Requested

Category	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
2. Buildings*	3000	5950	-	-	5950
5. Other Construction	2000	5080	-	-	5080
7. Other Equipment	4400	5000	-	-	5000
TOTAL	9400	16030	-	-	16030
* 21 Houses	-	1100	-	-	1100
22 Other Buildings	3000	4850	-	-	4850

(b) Non-British, Non-Malawi Expenditure

Nil

(c) Previous Expenditure

		Cumulative Total
To 31/12/68	Nil	Nil
1969 Printed Estimates	20,800	
1969 Revised Estimates	1,000	
1969 Estimated Carry-forward	19,800	
of which Jan-Mar 1970	9,400	
of which Jan-Mar 1970/71	10,400	

(d) Source of Finance

U.K. Development Loan	16,030
Beit Trust Grant	10,400
TOTAL	26,430

2. PROJECT TARGET

To provide an adequate supply of potable water to the Likuni Farm Institute and the Likuni Mission Hospitals and Schools.

Expected Completion Date: December 1970

3. BACKGROUND INFORMATION

The Likuni Agricultural Training Centre when first established obtained water from a single borehole. As the Centre grew, further attempts were made to develop additional groundwater supplies without success. In addition, the quality of the water from the original borehole

has in recent years deteriorated to a degree that it is no longer fit for drinking. At present the Centre draws water from the Likuni River but flow normally ceases towards the end of the dry season. From the point of abstraction on the Lilongwe River of the proposed scheme to the Likuni Agricultural Training Centre the pumping main will pass the Likuni Mission where two Government Aided Secondary Schools and a hospital are situated. Expansion of these institutions, which would be financed by Beit Trust Funds, has been deferred until an adequate water supply can be guaranteed, there being no possibility of developing further ground water supplies in the area.

4. PROPOSED NEW WORK 1970/73

Will include the construction of:-

(i) A raw water intake on the Lilongwe River in the area immediately upstream of the confluence of the Lilongwe and Likuni Rivers;

(ii) A raw water pumping station;

(iii) The main works immediately north of Likuni Mission including a reinforced concrete settlement tank, a rapid gravity filter, four pump sets and high level storage.

(iv) 22,000 linear feet of 4" diameter P.V.C. pumping main.

5. JUSTIFICATION FOR PROPOSED WORK

This project would permit the Likuni Agricultural Training Centre to function normally and to its maximum capacity. This is not possible under present circumstances, when only a limited amount of inferior quality water is available at the Centre for most of the year, with a near certainty that for short periods each year there will be no water available at all. In addition the project would permit the expansion of educational and health facilities at Likuni Mission to proceed as had been planned.

6. EXECUTION AND SUPERVISION

This project would be carried out by the Ministry of Works and Supplies

1970/71 DEVELOPMENT ESTIMATES

APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE : LIKUNI WATER SUPPLY

RESPONSIBLE MINISTRY : WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969 : HEAD 86 ITEMS 4 & 8

BRITISH AIDED PROJECT NO. : 78

1. PROJECT OFFICER : Chief Hydraulic Design Engineer. Execution by Ministry of Works & Supplies, Regional Engineer, Central Region, by direct labour.

2. FINANCIAL DETAILS

(a)

Details of Expenditure	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
2. Buildings					
Raw Water Pumping House	1000	200	-	-	200
Clear Water Pump & Treatment House	2000	4650	-	-	4650
Operators Housing	-	1100	-	-	1100
	3000	5950	-	-	5950
5. Other Construction					
Intake Structure	500	-	-	-	-
Settlement Tank	1000	1500	-	-	1500
Pumping Mains	500	3580	-	-	3580
	2000	5080	-	-	5080
7. Other Equipment					
Pumps, Motors, rapid gravity filters, chemical dozing equipment, recording equipment	4400	5000	-	-	5000
	4400	5000	-	-	5000
TOTAL	9400	16030	-	-	16030

(b) Notes on Expenditure

The total estimated cost for the project has increased from £20,800 to £26,430 due to design changes made necessary by other construction in the area. See attached note.

(c) Import Content:

	1970/71
Pumps, motors, rapid gravity filter, chemicals dozing equipment, pipes.	£13,180

(d) Breakdown of Expenditure by Region

All expenditure will be in the Central Region.

3. LOCATION OF CONSTRUCTION

In the area of Likuni Mission with pumping main extended along road to Likuni Agricultural Training Centre. Construction and installation by Ministry of Works and Supplies.

1970/71 DEVELOPMENT ESTIMATES

PROJECT SUBMISSION

"LIKUNI WATER SUPPLY SCHEME"

REASONS FOR INCREASE IN TOTAL COST

A water supply scheme serving the Likuni Agricultural Training Centre and Likuni Mission was first proposed in 1967 when a preliminary design and cost estimate were produced. The scheme was submitted for inclusion within the 1968 development estimates but no funds were made available. In 1969 the original total estimated cost of £20,800 was made available in equal contributions from Beit Trust and United Kingdom/Malawi loan funds and work on a detailed design was started. It soon became evident that a complete change in the layout of the scheme would be necessary as during 1968 a bridge for the Lilongwe Land Development Scheme had been built over the Lilongwe River immediately upstream of the proposed weir and intake for the water supply scheme. Unfortunately the bridge had been designed to pass only an annual flood and when a flood in excess of this occurred in January 1969 the earth embankment forming the approach road to the bridge on the north side of the river was over-topped and the area where it had been proposed to locate the combined pumping and treatment house was flooded. It was decided, therefore, to locate the raw water pumping house at the river and move the treatment and treated water pumphouse to a location North of the Likuni Mission. This will involve the following additional costs:-

(a) The original pump and treatment house would have been similar to those constructed at Kasungu and Ntchisi at a cost of £3,000. The new treatment house in order to command by gravity the 7 storage tanks serving Likuni Mission incorporates a main storage tank on the roof and this will make it necessary to construct a concrete frame building at an estimated cost of £6,650. In addition the raw water pumphouse which is now necessary will cost £1,200.

(b) As the raw water pumps will now be required to raise water through 140 feet instead of the original 30 feet quotations were called for both single and multistage pumps. Upon receipt of the quotations it was calculated that the higher costs of the multistage pumps would be more than offset by the saving made during the first 10 years of operation due to the fact that the multistage pumps operate at 69% efficiency while the single stage pumps operate at 49% efficiency. The multistage pumps were therefore ordered at a cost of £780 more than the single stage pumps.

The revisions to this project will therefore raise the total estimated cost from £20,800 to £26,430.

LOCATION OF CONSTRUCTION CAMPS AND PLANT YARDS

In the area of Likuni Mission [illegible]
to Likuni Agricultural Training Centre.
[illegible] by Ministry of [illegible]

"SAVING" [illegible]

[illegible] IN TOTAL COST

1970/71 DEVELOPMENT ESTIMATES

PROJECT SUBMISSION

PROJECT TITLE : DISTRICT WATER SUPPLIES (FORMERLY "WATER SUPPLY EXTENSIONS AND CONNECTIONS")

RESPONSIBLE MINISTRY : WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969 : HEAD 86, ITEM 63

RELATED PROJECTS : Likuni Water Supply

1. FINANCIAL SUMMARY:

(a) Funds Requested

Category	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
5 Other Construction	-	6,000	20,000	20,000	46,000
7 Other Equipment	5,000	7,000	36,000	38,000	81,000
TOTAL	5,000	13,000	56,000	58,000	127,000

(b) Non-British, Non-Malawi Expenditure

Not applicable.

(c) Previous Expenditure

		Cumulative Total
To 31/12/67		31,885
1968	7,366	38,751
1969 Printed Estimates	4,157	
1969 Revised Estimates	3,594	
1969 Estimated Carry-Forward	Nil	

(d) Source of Finance

Local resources

2. PROJECT TARGET

(a) To expand and improve existing Government operated water supply schemes as required by the increase in consumption at the centres served.

(b) To construct and operate new schemes as required within the available financial resources.

Expected completion date

Continuing project, partly financed from revenues collected.

3. BACKGROUND INFORMATION

The Ministry of Works and Supplies operates the Zomba Water Supply and thirty-four District Supply Schemes representing a capital investment of £850,000 supplying two million gallons of water per day. The average annual increase in the consumption of water for all schemes has been 11% and each year the design capacity of a number of schemes is overtaken by consumption.

4. PROPOSED WORK 1970/73

1970/71: Improvements are required to all of the following schemes:-

Zomba, Mpemba, Cholo, Balaka, Dowa, Chitedze, Nkhotakota, Mzuzu, Mzimba and Rumpi.

It is proposed, however, to use the available funds for improvements at Balaka, Chitedze and Rumpi which have priority.

1971/73: It is impossible at this stage to draw up a firm priority list of schemes which would require expansion and improvement but is likely that the available funds will have to be spent on some or all of the following schemes which are either overloaded or reaching maximum capacity. Zomba, Mpemba, Cholo, Dowa, Nkhotakota, Mzuzu, Mzimba and Rumpi.

5. JUSTIFICATION FOR PROPOSED WORK

The Balaka Water Supply has failed on several occasions during the past two years and it is considered essential to instal an improved type of pump of greater capacity and replace the present pumping main by a main of larger diameter.

The completion of the hospital at Rumpi has made it necessary to increase the pumping capacity which in turn requires additional work to the river intake structure.

At Chitedze the five pumps now installed are 20 years old and with spares no longer available must be replaced. It is proposed, however, instead to extend the Likuni Scheme to Chitedze and Colby College by the installation of booster pumps and a pumping main.

6. EXECUTION AND SUPERVISION

By the Ministry of Works and Supplies.

1970/71 DEVELOPMENT ESTIMATES

APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE : DISTRICT WATER SUPPLIES (FORMERLY "WATER SUPPLY EXTENSIONS AND CONNECTIONS")

RESPONSIBLE MINISTRY : WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969 : HEAD 86 ITEM 63

1. PROJECT OFFICER : Chief Hydraulic Design Engineer

Execution by Ministry of Works and Supplies, through the Regional Engineers Central & Southern Regions, by direct labour.

2. FINANCIAL DETAILS

(a) Details of Expenditure

	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
5 Other Construction					
Pumping mains, - river intakes etc.	-	6,000	20,000	20,000	46,000
7 Other Equipment					
Pumpsets, treatment equipment.	5,000	7,000	36,000	38,000	81,000
TOTAL	5,000	13,000	56,000	58,000	127,000

(b) Notes on Expenditure

Nil

(c) Import Content

	Jan-Mar 1970	1970/71	1971/72	1972/73	1970/73
Pipes, pumpsets treatment equipment.	4,000	5,000	28,000	29,000	66,000

(d) Breakdown of Expenditure by Region

	Jan-Mar 1970	1970/71
Southern Region	5,000	6,000
Central Region	-	5,000
Northern Region	-	2,000

3. LOCATION OF CONSTRUCTION

In 1970/71 at Balaka, Chitedze and Rumpi.

In 1971/73 probably Zomba, Mpemba, Cholo, Dowa, Nkhotakota, Mzuzu, Mzimba, and Rumpi.

HEAD 87

WORKS ORGANIZATION

1970/71 DEVELOPMENT ESTIMATES

PROJECT SUBMISSION

PROJECT TITLE	:	WORKS TRAINING SCHEME
RESPONSIBLE MINISTRY	:	WORKS AND SUPPLIES
MALAWI DEVELOPMENT ESTIMATES 1969	:	HEAD 87 ITEM 1
BRITISH AIDED PROJECT NO.	:	51
RELATED PROJECTS	:	All Ministry of Works and Supplies activities

1. FINANCIAL SUMMARY

(a) Funds Requested

Category	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
9. Running Expenses	4,000	20,000	20,000	20,000	60,000
TOTAL	4,000	20,000	20,000	20,000	60,000

(b) Non-British, Non-Malawi Expenditure

Training Aids, Books Etc.125	500	500	500	1,500

(c) Previous Expenditure

		Cumulative Total
To 31/12/68		49,806
1969 Printed Estimates	20,000	
1969 Revised Estimates	19,724	
1969 Estimated Carry-Forward	Nil	

(d) Source of Finance

U.K. Development Loan

2. PROJECT TARGET

To speed the localisation of technical posts in the Ministry of Works and Supplies by providing training courses and training facilities for tradesmen, technicians and supervisory staff.

Expected Completion Date

Continuing project. To be transferred to Revenue Account as soon as possible.

3. BACKGROUND INFORMATION

In 1963 the Ministry's Zomba Training Centre opened (under assistance from Colonial Development and Welfare Fund Project No. D5205) to provide facilities to expand then existing training schemes. The first schemes were directed at training foremen and supervisors for the Roads, Buildings and Plant and Vehicles Departments.

Under the present project the facilities have been further extended to embrace the training of foremen for water supply works and schemes, and also the upgrading of some tradesmen, in order to provide a class of trained men from whom future foremen and supervisors may be selected. These upgrading facilities have been extended into the field by means of modular training schemes and evening classes run at regional centres to allow tradesmen to receive instruction without losing them from normal duties.

It is also necessary to run training schemes for a few specialised posts such as Clerk of Works. In addition the further training of men already in supervisory posts is essential, and a series of short specialised courses must be prepared.

The Ministry also participates in the National Apprenticeship Scheme under which apprentices receive formal training at Ministry of Education centres, but depend on employers (including the Ministry of Works and Supplies) for practical work.

4. PROPOSED WORK

To pursue the objects of this continuous training process, viz:

(a) To prepare Malawians to fill responsible technical posts in the Ministry of Works and Supplies.

(b) To improve the standards and abilities of Malawians already in technical posts.

(c) To raise the standard of workmanship and increase the opportunities for advancement of tradesmen by preparing them for higher levels of trade qualifications.

In 1970 the followirg courses have been arranged:-

(a) Residential

7th Advanced Roads Course
5th Building Foremen's Course
2nd Water Foremen's Course
5th Mechanical Foremen's Course
1st City & Guilds/Upgrading Course in Carpentry & Joinery
1st City & Guilds/Upgrading Course in Brickwork

(b) At Regional Centres

Modular Training Courses for Mechanics
Upgrading Courses (Evenings) for Mechanics
Upgrading Courses (Evenings) for Electricians

(c) In Service Training

Second Stage Training for 24 Foremen Trainees
Practical Training for 122 Apprentices in M.V. Mechanics, Carpentry & Joinery, Bricklaying, Wood Machinery, Electrical Work, etc.

5. JUSTIFICATION FOR PROPOSED WORK

There are insufficient trained and experienced Malawians to fill the foremen and supervisory grades of posts in the departments of the Ministry of Works and Supplies which are responsible for undertaking buildings and civil engineering maintenance and construction work. (The scarcity is equally serious in the private sector.)

In the Ministry of Works and Supplies the following is the position:

LOCALISATION OF SUPERVISORY POSTS

AS AT 10th JUNE, 1969

Dept.	Chief Supervisor	Senior Supervisor	Clerk of Works	Supervisor	Foreman	Trainees Stage 1	Trainees Stage 2
Roads							
Total Posts	7	11		24	42		
No. localised	-	6		19	43		3
Balance	7	5		5	-		
Vacant	2	1		4	-		
Buildings							
Total Posts	4	4	12	34	40		
No. localised	-	-	1	17	25		10
Balance	4	4	11	17	15		
Vacant	-	-	-	12	15		
Mechanical							
Total Posts	6	7		46	33		
No. localised	-	-		13	20	12	6
Balance	6	7		33	13		
Vacant	-	-		-	13		
Water							
Total Posts	1	1		10	4		
No. Localised	-	-		-	2	12	9
Balance	1	1		10	2		
Vacant	-	-		3	2		

Note: Not including 31 electrical men on courses in the U.K.

Note: The loss of qualified men to commercial garages, because of the higher salaries offered, causes slow localisation at higher levels.

Clearly both classroom and in-service training will have to continue for some time to enable sufficient Malawians to be made available to take over posts at present held by expatriates, and to improve the qualifications of those Malawians already appointed.

6. EXECUTION AND SUPERVISION

The Ministry has a Training Officer, with a staff of Instructors in Roads, Buildings, Mechanical and Water Supply work. They operate a residential training centre with classrooms and workshop facilities as well as living quarters for sixty trainees, and classrooms at regional centres.

1970/71 DEVELOPMENT ESTIMATES

APPENDIX T PROJECT MEMISSION

PROJECT TITLE : WORKS TRAINING SCHEME

RESPONSIBLE MINISTRY : WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969 : HEAD 87 ITEM 1

BRITISH AIDED PROJECT NO. : 51

1. PROJECT OFFICER : Ministry of Works and Supplies Training Officer.

2. FINANCIAL DETAILS

(a) Details of Expenditure

	Notes	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
9. Running Expenses						
Training Centre Costs	(1)&(5)	2,000	5,500	5,500	5,500	16,500
General Training Exs.	(2)&(5)	1,500	2,000	2,000	2,000	6,000
Upgrading Courses	(3)	-	4,000	4,000	4,000	12,000
Apprenticeship Scheme	(4)	500	8,500	8,500	8,500	25,500
TOTAL		4,000	20,000	20,000	20,000	60,000

(b) Notes on Expenditure

(1) Training Centre Costs are reasonably constant (subject to fluctuation in price of goods) although running costs increase with a sustained programme of short courses.

(2) General Training Expenses cover the cost of correspondence courses, sponsored students attending courses outside the Training Centre, training aids and materials for visual work, preparation of manuals, payment of casual instructors, etc.

(3) Upgrading Courses include courses for Foremen and trainees as well as ordinary tradesmen, and the modular scheme of training for mechanics. Such courses are held in the Training Centre at Zomba and also in the Regions. Regional courses may run either on Block Release or evening class basis.

(4) Apprenticeship. The estimates given and the remainder of this note (4) assume that the Ministry's apprentice commitment under the National Apprenticeship Scheme does not increase. By 1970 the Ministry will probably be training the maximum number of apprentices that can be given proper experience and instruction. To reduce the training costs, apprentices' wages are partly allocated against works votes and partly against the Training Scheme. The practice is as follows:-

(i) During the first year when apprentices are not fully productive their wages are wholly charged to the Works Training Scheme.

(ii) In subsequent years, as the apprentices are equivalent to a certain level of tradesman, their wages are charged to works projects.

(iii) Wages for full time training periods are charged to the present project.

(5) Non-U.K. Items are necessarily involved in both the Training Centre Costs and General Training Expenses. The kitchen equipment is mainly of non-U.K. origin. Similar factors apply to some of the training and visual aids (models, projectors, etc) and to certain items of instructional equipment (e.g. water pumps, dumpy levels, etc.).

(c)

Import Content	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
Tools, training aids, books etc. (Approx.)	300	2,000	2,000	2,000	6,000
Services (repairs etc) (Approx.)	100	300	300	300	900
TOTAL	400	2,300	2,300	2,300	6,900

(Continued on page 6)

(d) Breakdown of Expenditure by Region

Category	Jan - Mar 1970				1970 to 1971				1971 to 1972				1972 to 1973				TOTAL 1970 - 1973			
	S	C	N	HQ	S	C	N	HQ	S	C	N	HQ	S	C	N	HQ	S	C	N	HQ
Running Expenses	600	200	200	3000	800	400	400	18400	800	400	400	18400	800	400	400	18400	3000	1400	1400	58200
TOTAL	600	200	200	3000	800	400	400	18400	800	400	400	18400	800	400	400	18400	3000	1400	1400	58200

3. LOCATION OF CONSTRUCTION

No major construction work is included although there may be minor alterations to buildings at the Zomba Training Centre or to Regional Classrooms.

1970/71 DEVELOPMENT ESTIMATES

PROJECT SUBMISSION

OJECT TITLE	:	PLANT AND VEHICLE HIRE SCHEME
SPONSIBLE MINISTRY	:	WORKS AND SUPPLIES
LAWI DEVELOPMENT ESTIMATES, 1969	:	HEAD 87 ITEM 2
ITISH AIDED PROJECT NO.	:	49
LATED PROJECTS	:	All Government Projects with Expenditure on Plant and Vehicles

FINANCIAL SUMMARY

(a) Funds Requested

Category	Jan-Mar 1970	1970/71	1971/72	1972/73	TOTAL 3 Yrs
2 Buildings*	4,000	43,850	48,350	-	92,200
6 Plant & Vehicles	-	6,700	10,600	-	17,300
7 Other Equipment	3,500	12,720	9,430	-	22,150
TOTAL	7,500	63,270	68,380	-	131,650
*21 Houses	-	4,850	4,850	-	9,700
22 Other Buildings	4,000	39,000	43,500	-	82,500

(b) Non-British, Non-Malawi Expenditure

Nil

(c) Previous Expenditure

		Cumulative Total
To 31/12/67	6,844	6,844
1968	30,117	36,961
1969 Printed Estimates	38,000	
1969 Revised Estimates	36,683	
1969 Estimated Carry-Forward	4,788	
included in Jan-Mar. 1970 above		

(d) Source of Finance

U.K. Development Loan

. PROJECT TARGET

To implement the recommendations contained in the survey carried out by Messrs. Urwick, Orr and Partners International Limited, for a Government Plant and Vehicle Hire Scheme. The aims of the Scheme are:-

(a) to ensure maximum availability of all plant and vehicles by efficient maintenance and repair;

(b) to improve maintenance and repair facilities to cover the increasing holdings of plant and vehicles;

(c) to allow replacement and holdings to be controlled centrally for all Government Departments;

(d) to allow true costs for use of plant and vehicles to be accurately assessed and debited.

Expected Completion Date

31st March, 1972. Thereafter capital requirements should be financed from income derived under the Plant and Vehicle Hire Scheme.

3. BACKGROUND INFORMATION

(a) The aim of the Malawi Government is to introduce a fully self-supporting Plant and Vehicle Hire Scheme. This cannot be done until the existing repair, accounting and storage facilities are improved and the aim of this project is to bring these facilities up to the required standard.

(b) The Malawi Government plant and vehicle holdings have been increasing at 10% per year capital value for the last four years, and this rate of increase will probably be maintained in the next few years to meet anticipated large scale development. The present capital value of all Government plant and vehicles at the end of 1969 was £4,145,000.

(c) Present workshop facilities and ancillary services are inadequate to deal with this increase, or indeed the present holding.

(d) The present method of accounting does not show the true cost of operating, maintaining and replacing plant and vehicles.

(e) The Stores Organisation of the Ministry of Works and Supplies is responsible for the purchase, storage and issue of all mechanical stores used by the Malawi Government. Formerly, supplies were obtained principally from commercial sources in Rhodesia and South Africa, and were available at very short notice. The Stores Organisation has now switched over to purchasing and holding stocks of spares from the United Kingdom and because shipping takes longer it is necessary to have increased storage facilities in order to hold adequate stocks.

(f) In 1967 consultants were engaged to advise the Government on the possible introduction of the Plant and Vehicle Hire Scheme. They advised that the Government should introduce such a scheme in three stages. The present project puts into effect the first stage and the consultants return in January 1970 to advise on the implementation of stages two and three, which involve the recruitment and training of accounting staff and the establishment of the financial control and accounting system.

4. PROPOSED WORK 1970/73

(a) to provide additional workshop buildings and equipment at regional centres and out-stations;

(b) to increase the capacity of Plant and Vehicle Department's Base Workshops at Blantyre for engine overhauls and ancillary work;

(c) to provide housing for additional workshop staff at regional centres and out-stations;

(d) to provide mobile workshops and breakdown repair facilities for mechanical services equipment at remote centres such as schools and hospitals;

(e) to increase workshop capacity for repair and maintenance of mechanical services equipment;

(f) to increase storage capacity for spare parts, etc;

(g) to purchase accounting machinery.

5. JUSTIFICATION FOR PROPOSED WORK

(a). to enable work to be carried out at minimum cost by more efficient use of plant and vehicles;

(b) to enable the true costs of maintaining, operating and replacing plant and vehicles to be known;

(c) to enable savings in capital investment by reducing through improved maintenance, the number of vehicles and plant out of action.

6. EXECUTION AND SUPERVISION

Ministry of Works and Supplies Department of Plant and Vehicles.

1970/71 DEVELOPMENT ESTIMATES

APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE : PLANT AND VEHICLE HIRE SCHEME

RESPONSIBLE MINISTRY : WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969 : HEAD 87 ITEM 2

BRITISH AIDED PROJECT NO. : 49

1. PROJECT OFFICER : The Director of Plant and Vehicles, Ministry of Works and Supplies

2. FINANCIAL DETAILS

(a) Details of Expenditure	Jan-Mar 1970	1970/71	1971/72	1972/73	TOTAL 3 Yrs
2 Buildings (W)					
(1) Extension to Mechanical Stores, Blantyre	3,500				
(2) New Fuel Injection Shop, Base Workshops, Blantyre.	500				
(3) Extension to Plant and Vehicle Department Workshops in Lilongwe		8,000			
(4) New Diesel Pump Test Room for Lilongwe Workshops		2,000			
(5) New Machine Shop for Lilongwe Workshop. Present Machine Shop to be used as "Component" repair shop		3,000			
(6) Additional three bays and pits for Plant Workshops, Base Workshops, Blantyre		4,000			
(7) Additional six bays and pits for Vehicle Workshops, Base Workshops, Blantyre		6,000			
(8) New Plant and Vehicle Department Workshops at Ngabu (Southern Region)		6,000			
(9) One CH1O house for officer i/c new Workshops at Ngabu (Southern Region). (See above item)		4,850			
(10) New Tool and Equipment Stores and additional equipment for Fort Johnston.		1,000			
(11) Extension to Mechanical Stores, Lilongwe		9,000			
(12) Additional Workshop bays and pits at Mzimba				1,000	

	Jan-Mar 1970	1970/71	1971/72	1972/73	TOTAL 3 Yrs
(13) Additional Workshop bays and pits at Fort Johnston			1,500		
(14) Service Bay extension in Base Workshops, Blantyre, for duplicating output			5,000		
(15) New Workshop at Lilongwe General Hospital for Mechanical Services Section of Plant & Vehicle Department, for repairs to medical equipment, boilers, cooking equipment, laundry equipment, refrigeration and air conditioning equipment			4,000		
(16) New workshop at Queen Elizabeth Hospital for Mechanical Services Section of Plant and Vehicle Department for repairs as in above item			15,000		
(17) New "Unit" rehabilitation and component repair shop in Base Workshops, Blantyre			8,000		
(18) New Plant and Vehicle Department Workshops in Rumpi			6,000		
(19) One CH10 house for officer i/c new workshop at Rumpi (See above item)			4,850		
(20) Conversion of old engine shop, Base Workshops, Blantyre, for use as a welding and fabrication shop			1,000		
(21) Conversion of old fuel injection shop, Base Workshops, Blantyre, for use as an Electrical Shop			500		
(22) Extension to Mechanical Stores, Mzuzu			1,500		
TOTAL CATEGORY 2	4,000	43,850	48,350		92,200
6 Plant and Vehicles					
(24) One Fork Lift Truck Hyster H.60.F Challenger Base Workshops, Blantyre			4,200		
(25) One 5 Ton Flat Lorry for Mobile Welding Unit, Mzuzu Workshops			2,500		
(26) One Fork Lift Truck 1½ ton capacity, Lilongwe Workshops			3,000		
(27) One "light" recovery and breakdown vehicle. Southern Region, Blantyre			2,500		

	Jan-Mar 1970	1970/71	1971/72	1972/73	TOTAL 3 Yrs
(28) One "light" recovery and breakdown vehicle. Northern Region, Mzuzu			2,500		
(29) One Landrover "109" LWB fitted with Simon Type Hydraulic Lift			2,600		
TOTAL CATEGORY 6	-	6,700	10,600	-	17,300
7 Other Equipment					
(30) Office Equipment	2,500	500			
(31) Machine tools, tools and equipment for new Fuel Injection Shop, Base Workshops	1,000				
(32) ditto for item (3) above		1,350			
(33) ditto for item (25) above		2,000			
(34) ditto for item (5) above		500			
(35) ditto for item (6) above		1,500			
(36) ditto for item (7) above		1,500			
(37) ditto for item (8) above		1,000			
(38) ditto for item (9) above		700			
(39) ditto for item (11) above		550			
(40) One H.D. Pedestal Grinder, Zomba Workshops		150			
(41) One Welding Plant. Transformer type 400 AMP capacity. Single. Zomba Workshops		300			
(42) One Welding Plant. Engine driven 200 AMP capacity. Single. Mzuzu Workshops (See item 27 above)		350			
(43) Storage Bins and racking for item (12) above		1,500			
(44) Runways, trucks and barrows for Mechanical Stores Items 12 and 23 above		820			
(45) Machine tools, tools and equipment for item (14) above			200		
(46) ditto for item (15) above			2,500		
(47) ditto for item (16) above			500		
(48) ditto for item (17) above			3,000		

	Jan-Mar 1970	1970-71	1971-72	1972-73	TOTAL 3 Yrs
(49) ditto for item (18) above		1,000			
(50) ditto for item (19) above		700			
(51) One wheel balance Zomba Workshops		360			
(52) One Paraffin Pressure Cleaning Tank, Lilongwe Workshops		170			
(53) Storage Bins and racking for item (23) above		1,000			
TOTAL CATEGORY 7	3,500	12,720	9,430	-	22,150
TOTAL PROJECT	7,500	63,270	68,380	-	131,650

(W) = All construction work to be carried out by Ministry of Works and Supplies

(b) Notes on Expenditure

All plant, vehicles, machine tools, tools and workshops equipment to be of United Kingdom or Malawi origin.

(c) Import Content

	Jan-Mar 1970	1970-71	1971-72	1972-73	TOTAL 3 Yrs
2 Buildings	1,300	15,160	16,000	-	31,160
6 Plant & Vehicles	-	6,700	10,600	-	17,300
7 Other Equipment	3,500	12,720	9,430	-	22,150
TOTAL	4,800	34,580	36,030	-	70,610

(d) Breakdown of Expenditure by Regions

	Jan-Mar 1970	1970/71			1970/72		
	S	S	C	N	S	C	N
2 Buildings	4,000	21,850	22,000		31,000	4,000	13,350
6 Plant & Vehicles	-	4,200	-	2,500	5,100	3,000	2,500
7 Other Equipment	3,500	10,050	-	2,670	7,560	170	1,700
TOTAL	7,500	36,100	22,000	5,170	43,660	7,170	17,550

3. LOCATION OF CONSTRUCTION

Blantyre
Lilongwe
Ngabu (Chikwawa)
Fort Johnston
Mzimba
Rumpi
Mzuzu

All construction will be by the Ministry of Works & Supplies

1970/71 DEVELOPMENT ESTIMATES

PROJECT SUBMISSION

PROJECT TITLE	:	ADDITIONAL, SUBSTITUTE AND REPLACEMENT PLANT AND VEHICLES
RESPONSIBLE MINISTRY	:	WORKS AND SUPPLIES
MALAWI DEVELOPMENT ESTIMATES 1969	:	HEAD 87 ITEM 4
BRITISH AIDED PROJECT NO.	:	79
RELATED PROJECTS	:	The entire Development Programme on Roads, Buildings and Water Supply and Concomitant Maintenance.

1. FINANCIAL SUMMARY

(a) Funds Requested

Category	Jan-Mar 1970	1970/71	1971/72	1972/73	TOTAL 3 Yrs.
6 Plant & Vehicles	230,000	150,000	150,000	150,000	450,000
TOTAL	230,000	150,000	150,000	150,000	450,000

(b) Non British, Non Malawi Expenditure

Nil

(c) Previous Expenditure

		Cumulative Total
1967	115,507	115,507
1968	123,000	238,507
1969 Printed Estimates	222,000	
1969 Supplementary Provision	201,200	
1969 Revised Expenditure	191,200	
1969 Estimated Carry Forward included in Jan-March 1970 above	230,000	

(d) Source of Finance

U.K. Development Loan

2. PROJECT TARGET

To purchase additional, substitute and replacement plant, vehicles and equipment for use on development projects, and to maintain these projects.

Expected Completion Date

Future expenditure will probably be provided for under the Plant and Vehicle Hire Scheme.

3. BACKGROUND INFORMATION

(i) The Malawi Government's maintenance commitments are approximately 270 miles of bitumen (plus approximately another 150 miles when the Zomba-Lilongwe Road Project is completed in 1970), 611 miles of gravel, 3125 miles of earth roads and buildings valued at £27 million.

(ii) Adequate resources of plant, vehicles and equipment are required, not only to maintain the items set out in sub-paragraph (i) above, but also to implement Government's annual programmes of new road construction by direct labour.

(iii) To cope with new construction and recurring maintenance works, the Ministry of Works and Supplies currently has the following holding of plant and vehicles :-

Age	Plant	Vehicles	Total
Over 10 Years	232,014	8,880	240,894
8-10 Years	292,656	18,738	311,394
5-7 Years	352,387	172,296	524,683
Under 5 Years	625,039	594,554	1,219,593
TOTAL	1,502,096	794,468	2,296,564

(iv) Provision for the replacement of plant and vehicles originally purchased with Revenue Account funds is included in the annual Revenue Account Estimates. This amounts to £165,820 in 1969. For the years 1966, 1967 and 1968 provisions were £210,000, £274,252 and £175,000 respectively. Items originally purchased with Development Account funds are normally replaced from that source. Expenditure in the years 1966, 1967 and 1968 was £56,302, £98,011 and £123,889 respectively.

(v) The plant and vehicle capacity of the Ministry of Works and Supplies is geared to both maintenance and development work. The extent of development work which must, for various reasons, be undertaken by direct labour is high. It involves numerous small jobs in remote areas not suitable for contract work. This project provides for the replacement of old or worn-out plant and vehicles.

4. PROPOSED WORK 1970/73

To purchase necessary replacement plant, vehicles and equipment.

5. JUSTIFICATION FOR PROPOSED WORK

The Government must have capacity to undertake directly both maintenance work and certain development work, particularly construction or building in remote areas where contract work would be uneconomic. The extent of road construction work in rural areas to be carried out by direct labour, is expected in 1970, to increase from £119,000 value to £267,000. No significant decrease in the level of this work is foreseen in the next few years. Maintenance work will, of course, increase as a result of new development. Accordingly, the plant and vehicle holding must be maintained at its present level. It is expected that the Plant and Vehicle Hire Scheme will provide for the replacement of plant and vehicles.

6. EXECUTION AND SUPERVISION

By the Director of Plant and Vehicles through the Secretary for Works and Supplies.

1970/71 DEVELOPMENT ESTIMATES

APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE : ADDITIONAL, SUBSTITUTE AND REPLACEMENT PLANT AND VEHICLES

RESPONSIBLE MINISTRY : WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969 : HEAD 87 ITEM 4

BRITISH AIDED PROJECT NO. : 79

1. PROJECT OFFICER

Director of Plant and Vehicles through Secretary for Works and Supplies.

2. FINANCIAL DETAILS

(a) Details of Expenditure

	Jan-Mar 1970	1970/71	1971/72	1972/73	TOTAL 3 Yrs
6 Plant and Vehicles					
12 No. Tipping Lorries 4 cu. yd.		25,800			
3 No. Water Bowsers 1000 gall.		6,450			
6 No. Flat Lorries 5 ton		11,760			
3 No. L/Rovers Pick-up		3,300			
1 No. 3/4-4Ocwt Pick-Up		1,350			
1 No. Mov. loader		15,000			
2 No. D6C Caterpillar Tractors		34,500			
2 No. Graders Wakefield "130"		18,900			
5 No. Wheeled Tractors		7,000			
2 No. 3" Water Pumps		1,000			
1 No. Front end Loader "944"		10,840			
Various Grass Mowers		1,050			
1 No. Conveyor		600			
1 No. Compressor		3,000			
1 No. BSP Rig		5,000			
2 No. BSP 1¼ ton Drop Hammers		1,000			
1 No. Albion Reiver		3,450			
Plant & Vehicles ordered in 1969	230,000				
TOTAL	230,000	150,000	150,000	150,000	450,000

(b) Notes on Expenditure

Details of expenditure for 1971/72 and 1972/73 for additional and replacement items cannot be predicted at this stage, due to varying rates of utilisation and wear on items. The number and types of items may be revised, as circumstances demand.

(c) Import Content

The whole project is for imported plant and vehicles.

(d) Breakdown of Expenditure by Regions

All at Headquarters.

3. LOCATION OF CONSTRUCTION

None

1970/71 DEVELOPMENT ESTIMATES

PROJECT SUBMISSION

PROJECT TITLE : UPKEEP OF PLANT AND VEHICLES

RESPONSIBLE MINISTRY : WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969 : HEAD 87 ITEM 61

RELATED PROJECTS : All development projects requiring Ministry of Works and Supplies Plant and Equipment.
Plant and Vehicle Hire Scheme.

1. FINANCIAL SUMMARY

(a) Funds Requested

Category	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
7 Other Equipment	23,500	100,000	100,000	100,000	300,000
TOTAL	23,500	100,000	100,000	100,000	300,000

(b) Non-British, Non-Malawi Expenditure

Not applicable.

(c) Previous Expenditure

		Cumulative Total
1967 to 31/12/68	60,061	50,905 110,966
1969 Printed Estimates	101,000	
1969 Revised Estimates	101,000	
1969 Estimated Carry-Forward	Nil	

(d) Source of Finance

Local Resources.

2. PROJECT TARGET

To ensure that all Ministry of Works and Supplies plant and vehicles engaged on development work, on behalf of all Ministries, are kept in good working order with a high utilisation rate.

Expected Completion Date

This project will probably become redundant when the Plant and Vehicle Hire Scheme is fully operating.

3. BACKGROUND INFORMATION

The running costs of Ministry of Works and Supplies plant and vehicles used on development projects are charged directly to project votes, including the cost of replaceable items such as wearing and cutting edges, grader blades, etc. Workshop repair costs cannot be charged directly to projects because the accounting system is not yet sufficiently sophisticated, although it is envisaged that when the plant and vehicle hire scheme is fully operative this will be possible. Accordingly workshop costs in respect of both spares and labour are now charged to this project.

4. PROPOSED WORK 1970/73

Maintenance and repair of plant and vehicles on Development work.

5. JUSTIFICATION FOR PROPOSED WORK

To enable the Government's development programme to be carried out, the Government must have adequate plant and vehicle capacity to undertake by direct labour a proportion of the civil engineering and building work included in the development programme.

6. EXECUTION AND SUPERVISION

Work will be carried out in Ministry of Works and Supplies workshops under the control of the Director of Plant and Vehicles.

1970/71 DEVELOPMENT ESTIMATES

APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE : UPKEEP OF PLANT AND VEHICLES

RESPONSIBLE MINISTRY : WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969 : HEAD 87 ITEM 61

1. PROJECT OFFICER : Director of Plant and Vehicles, Ministry of Works and Supplies.

2. FINANCIAL DETAILS

(a) Details of Expenditure

	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
7 Other Equipment	23,500	100,000	100,000	100,000	300,000
TOTAL	23,500	100,000	100,000	100,000	300,000

(b) Notes on Expenditure

Nil

(c) Import Content

	Jan-Mar 1970	1970/71	1971/72	1972/73
Spares, oils, greases, tyres and expendable workshops materials.	20,500	88,000	88,000	88,000

(d) Breakdown of Expenditure by Region

Expenditure will occur where plant and vehicles working on development projects are located.

3. LOCATION OF CONSTRUCTION

None.

1970/71 DEVELOPMENT ESTIMATES

PROJECT SUBMISSION

PROJECT TITLE : MINISTRY OF WORKS AND SUPPLIES DEVELOPMENT WORK STAFF

RESPONSIBLE MINISTRY : WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969 : HEAD 87 ITEM 71

RELATED PROJECTS : All development projects involving civil engineering and building design and construction work.

1. FINANCIAL SUMMARY

(a) Funds Requested

Category	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Years
8 Personal Emoluments	17,058	70,850	75,631	77,290	223,771
9 Running Expenses	3,000	12,000	13,000	14,600	39,600
TOTAL	20,058	82,850	88,631	91,890	263,371

(b) Non-British, Non-Malawi Expenditure

Not applicable.

(c) Previous Expenditure

	Cumulative Total
To 31/12/68	Nil
1969 Printed Estimates	76,148
1969 Revised Estimates	62,417
1969 Estimated Carry-Forward	Nil

(d) Source of Finance

Local resources.

2. PROJECT TARGET

To provide professional and technical staff to enable the Ministry of Works and Supplies to undertake the design, supervision and construction of civil engineering and building works in the development programme, whether by direct labour or contract.

Expected Completion Date

Under this project sufficient staff are being recruited to meet the requirements of the current 1970/73 development programme. Thereafter, the number of staff required will depend on the scale of the programme to be undertaken.

3. BACKGROUND INFORMATION

The current development programme involves civil engineering and building construction works on a scale beyond the capacity of the regular establishment of professional and technical staff of the Ministry of Works and Supplies, which is related to requirements for maintenance and a relatively limited programme only of new design and construction work. It is, therefore, necessary to recruit additional staff to undertake design and supervision of contracts and direct labour work, to be able to meet the demands of the Government's development programme. When sufficient suitable staff cannot be recruited consultants would have to be engaged but at a considerably increased cost.

4. PROPOSED WORK 1970/73

Recruitment and payment of suitably qualified staff.

5. JUSTIFICATION FOR PROPOSED WORK

(i) The staff to be financed under this project fall into two categories:

(a) Civil engineering and architectural design staff, including those required to supervise or check consultants' work;

(b) Staff to supervise work being undertaken both by direct labour or contract.

(ii) With regard to civil engineering and architectural design staff the development programme requires considerable engineering design which will have to be undertaken by consultants, departmental design in the Ministry of Works, or a combination of the two.

The latter method is preferred since:

(a) Government will be enabled to check on consultants to ensure that designs are functional rather than lavish, with consequent savings in expenditure;

(b) minor design work, which often fails to attract adequate consultant interest, can be undertaken departmentally, with a high degree of flexibility;

(c) preliminary design work can be undertaken on projects which are proposed but for which money has not yet been actually voted. The cost of such projects for budgetary and long-range planning purposes can be estimated accurately to ensure that the financial implication of development projects is correctly assessed;

(d) young professional Malawian engineers will be encouraged to join Government service. This will ensure that the Ministry of Works does not become wholly dependent on consultants when expatriate officers leave;

(iii) With regard to supervisory staff it is prudent in a rapidly developing country for the Government to ensure a limited direct labour capacity to construct and supervise engineering projects:

(a) as a yardstick with which to measure the performance of contractors and consultants who are often anxious to offer their services at a high price;

(b) to prevent the "rigging" of contract prices and the escalation of costs;

(c) to encourage young professional Malawian engineers and technical officers to join Government service by offering them interesting and worthwhile careers.

The benefit of establishing a limited but sound Ministry of Works capacity to design, construct and supervise engineering projects will far outweigh the cost of establishing such capacity. Private sector contractors and consultants will be forced to avoid excesses in design and profit margins because they will always be subject to qualitative and quantitative assessment by Government.

6. EXECUTION AND SUPERVISION

Ministry of Works and Supplies.

1970/71 DEVELOPMENT ESTIMATES

APPENDIX TO PROJECT SUBMISSION

PROJECT TITLE : MINISTRY OF WORKS AND SUPPLIES DEVELOPMENT WORKS STAFF

RESPONSIBLE MINISTRY : WORKS AND SUPPLIES

MALAWI DEVELOPMENT ESTIMATES 1969 : HEAD 87 ITEM 71

1. PROJECT OFFICER : The Secretary for Works and Supplies

2. FINANCIAL DETAILS

(a) Details of Expenditure

	Notes	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
8 Personal Emoluments	(1)					
Staff salaries and allowances	(2)	17,058	70,850	75,631	77,290	223,771
9 Running Expenses						
- Transport & Travelling		3,000	12,000	13,000	14,600	39,600
TOTAL		20,058	82,850	88,631	91,890	263,371

(b) Notes on Expenditure

(1) Figures for 1970 allow for only part recruitment.

(2) Posts to be charged to this project:-

Design Department	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
1 Director	675	2,700	2,700	2,700	8,100
1 Chief Highway Design Engineer	527	2,110	2,110	2,110	6,310
1 Chief Hydraulic Design Engineer	527	2,110	2,110	2,110	6,310
1 Highway Location Engineer	527	2,110	2,110	2,110	6,310
1 Road Design Engineer	500	2,000	2,000	2,000	6,000
1 Bridge Design Engineer	500	2,000	2,000	2,000	6,000
1 Senior Design Engineer	478	1,910	1,910	1,910	5,730
1 Senior Quantity Surveyor	478	1,910	1,910	1,910	5,730
1 Structural Engineer	292	1,170	1,223	1,339	3,732
3 Civil Engineers	876	3,510	3,669	3,828	11,007
2 Road Surveyors	943	3,771	3,771	3,771	11,313
1 Chief Materials Officer (Field)	350	1,402	1,465	1,528	4,395
2 Design Detailers	-	1,591	3,192	3,192	7,975
2 Quantity Surveyors	638	2,552	2,678	2,804	8,034
4 Draughtsmen	-	2,120	2,208	2,296	6,624
1 Stenographer	171	802	716	748	2,266
4 Tracers	157	598	640	684	1,920
TOTAL - Design Department	7,639	34,364	36,412	37,040	107,816

Project Planning and Construction	Jan-Mar 1970	1970/71	1971/72	1972/73	Total 3 Yrs
2 Senior Civil Engineers	955	3,820	3,820	3,820	11,460
2 Planning Officers	698	2,793	2,846	2,899	8,538
6 Civil Engineers	1,752	7,020	7,338	8,034	22,392
2 Chief Roads Supervisors	795	3,182	3,182	3,182	9,546
2 Senior Roads Supervisors	506	2,022	2,128	2,234	6,384
1 Senior Draughtsman	-	1,223	1,223	1,223	3,669
6 Roads Supervisors	894	3,576	3,708	3,840	11,124
4 Plant Superintendants	500	6,040	8,120	8,120	22,280
4 Mechanical Supervisors	1,490	5,960	5,960	5,960	17,880
1 Planning Technician	132	530	552	574	1,656
2 Draughting Assistants	80	320	342	364	1,026
1 Drilling Superintendant	398				
6 Drillers	1,219				
TOTAL - Project Planning	9,419	36,486	39,219	40,250	115,955
TOTAL	17,058	70,850	75,631	77,290	223,771

(c) Import Content - Nil

(d) Breakdown of Expenditure by Regions

All at Ministry Headquarters

3. LOCATION OF CONSTRUCTION

Not applicable.

NOTE ON CATEGORIES OF EXPENDITURE

The standard categories of expenditure used in this book of Project Submissions are as follows:-

Category	1	Design and Supervision
	2	Buildings *(sub-divided below)
	3	Water Supplies
	4	Roads and Bridges
	5	Other Construction
	6	Plant and Vehicles
	7	Other Equipment
	8	Personal Emoluments
	9	Running Expenses
	10	Special Expenditure

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*21	Houses
22	Other Buildings

10°
11°
12°
13°
14°
15°
16°

MALAWI

REPUBLIC OF THE CONGO
UNITED REPUBLIC OF TANZANIA
Luanda
Lubumbashi
Dar es Salaam
ANGOLA
ZAMBIA
MALAWI
REPUBLIC OF
Lusaka
Zomba
Salisbury
MOZAMBIQUE
SOUTHERN RHODESIA
SOUTH WEST AFRICA
BOTSWANA
Walvis Bay
Windhoek
Beira
SWAZILAND
Johannesburg
Lourenço Marques
REPUBLIC OF SOUTH AFRICA
LESOTHO
Durban
ATLANTIC OCEAN
INDIAN OCEAN

33°
34°
35°
36°
Lusungo
Buyonde
Songwe
Mwasalano
Kaporo
Malisa
Karonga
Makande
Vua
Chilumba
Masosi
Manda
Livingstonia
Mlowe
Kiroba
Lundu
Mpitimbi
Ruarwe
Usisya
Kafoku
Chikwina
KANDOLI MOUNTAIN
3227
NKHATA BAY
Kabunduli
Mankhambira
Chinteche
Mzimba
Bandawe
Kanyonga
Edingeni
Kapindo
Lundazi
Ciluvya
Bana
Nthunga
Lumezi
Chimbiranjara
Liwaladzi
Chanyama
KASUNGU
Kasungu
NKHOTA KOTA
Mtongo
Kasera
NTCHISI
Ntchisi
Chinterbwe
Benga
Madisi
Mbenji I.
Mponela
Chisepa
DOWA
Dowa
Salima
Nkhoma
Mwesa
Nsaru
Lombadzi
Ternwe
Kakolo
LILONGWE
Likuru
Mayani
Vila Cabral
Vila Coutinho
Vila Castro Xavier
Furancungo
Chipone
Casula
Chiuta
Massamba
Sarare
Cana Cang
Va Caldas Xavier
Chikwawa
Mecula
Metangula
Maniamba
Unango
Mecanhelas
Mandimba
Malema
Catur
Chiconde
Fort Maguire
Chipoka
Domwe I.
Monkey Bay
Kadango
Boadzulu I.
Malembo
Namwera
Mandimba
Malindi
Fort Johnston
Kasinje
JOHNSTON
Lukulungwe
Mpira
Nova Freixo
NCHEU
Nchau
Balaka
Chamba
KASUPE
Kasupe
Mpimbe
Matola
Neno
ZOMBA
Domasi
Lirangwe
BLANTYRE
Mwanza
MPATAMANGA GORGE
Chileka
Chirazulu
LIMBE
Namlongo
Mikande
Cholo
Khondini
Mlanje
Tete
Vila Manica
Vila Gouveia
Vila Mouzinho
Olivença
Chisumulu I.
Likoma I.
Chitege
Cobue
Tanganyika
Malawi
Zambezi
Shire
Ruo
Lisungwa
Luangwa
Songea
Matimbuka
Mozambique
Tanga
Mombasa
Kafakumba
Ebwe
Mzuzu
Mwaya
Kafulira
Mwenzo
Mbeya
Iringa
Dodoma
Kilwa
Lindi
Ruvuma
Nyasa
Chambezi
Luangwa
Kafue
Lukanga
Bangweulu
Mweru
Kariba
Sinoia
Umtali
Gwelo
Fort Victoria
Bulawayo
Wankie
Livingstone
Victoria Falls
Kafue
Lusaka
Broken Hill
Ndola
Kitwe
Chingola
Mufulira
Luanshya
Solwezi
Kasama
Abercorn
Mbala
Tunduma
Mbeya
Iringa
Dodoma
Kilwa
Lindi
Ruvuma
Nyasa
Chambezi
Luangwa
Kafue
Lukanga
Bangweulu
Mweru
Kariba
Sinoia
Umtali
Gwelo
Fort Victoria
Bulawayo
Wankie
Livingstone
Victoria Falls
Kafue
Lusaka
Broken Hill
Ndola
Kitwe
Chingola
Mufulira
Luanshya
Solwezi
Kasama
Abercorn
Mbala
Tunduma
1
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12°
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14°
15°
16°

11°

12°

13°

14°

15°

16°

MALAWI

Scale 1: 2,500,000

Miles

20 10 0 20 40 60

Boundaries-International

District

Railways — Proposed

Principal Roads

Other

Airfields

Administrative Headquarters are underlined in Red

Land over 7000 feet

5000-7000 "

4000-5000 "

3000-4000 "

below 3000 "

Heights in feet

Longitude 34° East of Greenwich

33° 35° 36°

11° 12° 13° 14° 15° 16° 17°

C D E F G H I

Mlowe Kiropa Mpitimbi

Ruarwe Usisya Matimbuka

Kaniaka Mbamba Bay Tingi

Chiwanda

OF TANZANIA

5314 Mwwina

KANDOLI MOUNTAINS

Nkhata Bay

3227

NKHATA BAY

Kabunduli Manikhambira

Chinteche

Bandawe

Olivença

Chisumulu I.

Likoma I.

Chitege

2124 Cóbuè

Kanyanga Edingeni

Kapinda

Lundazi

Ciluvya Bana

Mecundi

Songa

Nthungia

Lumezi

Chimbiripanjala

Metangula

Manimba

Unango Mesumira

Chamama

NKHOTA KOTA

KASUNGU

Kasungu

Mlanga

Mutarube

Vila Cabral

Chitunde

Kasera

NTCHISI

Nchisi

Benga

Madisi

Mbenji I.

Mpanela

Dowa

Fort Maguire

Chisepa

Salima

Catur

Mvera

Kadjanzhe

Chiteve

Lambadzi

Maleri I.

Domwe I.

Chipoka

Tembwe

Kalolo

LILONGWE

Likuni

Mkhoma

Monkey Bay

Kadonga

Mayani

Kachindamoto

Vila Cumito

Malemia me

Mpenene

Boadzulu

DEDZA

Namwera

Mangochi

Tiwi

Mwanzi

Malindi

Fort Johnston

Vila Cardoso Xavier

Kasisi

JOHNSTON

Chiperoni

Lukulungwa

Nova Freixo

Vila Coutinho

NCHEU

Ncheu

Mpira

Vila Manzinho

Meteroro Balama

Furancungo

Chiporie

Balaka

Kasupe

Ukweni

Mecanhelas

Domasi

Mpimbe

Matola

3460

ZOMBA

Chipera

Casula

Nsona

Chiwesa

Zóbuè

Liranguè

BLANTYRE

Mwanza

Chileka

Chiradzulu

Chiuta

Massamba

LIMBE

Namitanga

Petambe

Sarare

Cana Cana

Mikalongwe

Mikande

Dschenza

Chikwawa

Cholo

Khanjeni

Mlanje

Tete

Vinho

Mandié

Tekerani

Sankulani

Chiromo

Bandar

Sefala

Ancuaze

Tambara

Chiramba

Tenguni

Nsanje

Chemba

Charre

Mutarara

Meroloia

Mudirra

MATUNDWE RANGE

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